

MANUFACTURERS' RECORD

A Weekly Southern Industrial and Hardware Newspaper.

Vol. XII. No. 9.
WEEKLY.

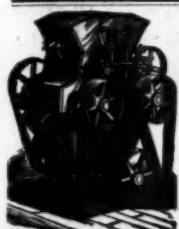
BALTIMORE, OCTOBER 8, 1887.

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Steam, Hydraulic and Locomotive Packing,
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Works, 413 to 421 Race St., Cor. of Crown.
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MANUFACTURERS', MILL and ENGINEERS' SUPPLIES
OF EVERY DESCRIPTION.
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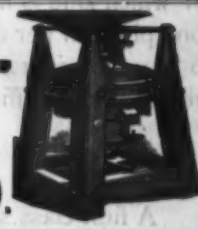
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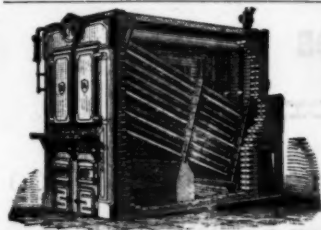
FACTS ABOUT THE NEW YORK AQUEDUCT TUNNEL.

When work began on the NEW CROTON AQUEDUCT, INGERSOLL "STRAIGHT LINE" AIR COMPRESSORS AND INGERSOLL DRILLS were adopted on about one-half the line. As the work progressed, the Engineer's Tables showed that the progress on the sections using INGERSOLL MACHINERY AVERAGED HIGHER THAN ALL OTHERS. This induced contractors on the other sections to put in INGERSOLL MACHINERY. Section "A," under Rodgers & Farrell, the first section north of Harlem River, was run for nearly a year with other machinery. In August, 1885, one-half the section was equipped with INGERSOLL DRILLS, which were so satisfactory that ALL OTHER DRILLS were thrown out, and the section was completed February 2d, 1887, WITH INGERSOLL DRILLS EXCLUSIVELY. During the ten months prior to completion, THE MONTHLY RECORDS AVERAGED 218 FEET, 8 1/2 FEET in one week, and 265 FEET, 6 INCHES MADE IN 26 DAYS, ALL FULL SECTION TUNNEL, 16x16 FEET. THIS IS THE BEST RECORD MADE IN FULL SECTION TUNNEL ON THE LINE. NATURE OF ROCK HARD GRANITE GNEISS.

INGERSOLL DRILLS HAVE COMPETED IN NO PRIZE COMPETITIONS ON THE AQUEDUCT. INGERSOLL Drills are now driving four-fifths of the aqueduct, and are used in the following shafts: Smith & Brown, Croton Dam Section, Ingersoll Drills and Air Compressors exclusively. Brown, Howard & Co., Shaft Zero to 11 B, Ingersoll Drills and Air Compressors exclusively (175 Drills, 19 Air Compressors). Shafts 12 A and 12 B, McLaughlin & Rellly, 14 Ingersoll Drills. Shaft 14, 2 Ingersoll Drills. Shaft 18, 5 Ingersoll Drills. Shaft 18 1/2, 2 Ingersoll Drills. Shaft 19, 6 Ingersoll Drills. Shafts 20 and 21, 9 Ingersoll Drills. Shafts 22 and 24 inclusive, Rodgers & Farrell, all Ingersoll Drills, 30 in number. Harlem River Section, Peterson & Co., Ingersoll Drills and Air Compressors exclusively. Shafts 27 and 28, 14 Ingersoll Drills and 1 Air Compressor. Terminal Gate-House at 135th Street, Ingersoll Drills exclusively.

SEND FOR DESCRIPTION OF AQUEDUCT WITH ENGINEER'S TABLES OF PROGRESS AND CATALOGUE.

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Safe, Economical, Durable.

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JOHN S. MOORE, 189 Gravier Street, New Orleans, La.
T. B. PACKER, Shidley Building, Kansas City, Mo.
V. MERRILL, 169 N. Third Street, Phila., Pa.
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◆ COLBERT COUNTY, ALA. ◆

The Iron Manufacturing Center of the South.

BEING at the *head of navigation*, and on the *south bank* of the Tennessee river, Sheffield is the *natural outlet* for the mineral and manufacturing products of Alabama and neighboring States seeking a water route to points on the Ohio and Mississippi rivers, and to the Gulf of Mexico, as well as the best *distributing point* over Alabama, Eastern Mississippi and East Tennessee, South Carolina, Georgia and Florida for Northern and Western produce, groceries, provisions, machinery, &c. *Four railroads* certain, and several others assured. *Principal shops of Memphis & Charleston Railroad* will be erected here pursuant to written contract. These will employ between *four hundred and five hundred mechanics*, and consequently, with their families, will make an increase in population of at least two thousand people. Shops of three other railroads are contracted to be located here.

◆ Five Blast Furnaces Now Under Construction, ◆

Of which one is nearly finished, and the remaining four contracted to completion next spring, have estimated capacity of 700 tons pig iron per day. This is 40 per cent. more than now manufactured at Birmingham, Alabama. Experts do not hesitate to say that *iron can be manufactured more cheaply* at Sheffield than at Birmingham, and its *river transportation facilities* will enable Sheffield iron to reach the principal markets at a saving of from

\$2.00 TO \$2.50 PER TON.

A first-class semi-weekly newspaper, printed by steam, is regularly issued. Furniture Factory, Bottling Works, Bakery, 3 Steam Brick Works, 2 Hand Brick Works, 2 Steam Wood-Working Establishments, Water Works, 2 Banks, a Savings Bank, and Steam Job Printing Office already in successful operation, and Iron Pipe Works, 15-ton Ice Machine and five-story hotel, with all modern appliances, will be erected. The Cleveland Hotel, Park House and numerous boarding houses furnish accommodations to travelers. Postoffice, Telegraph Office and Express Office already established. Contracts have been made for the early erection of Electric Light Works, Paint Works, Agricultural Implement and Machine Works and Cotton Compress. Large Stove Works, Machine Shops, additional Iron Blast Furnaces, an extensive Charcoal and Chemical Plant, a large Rolling Mill and other manufacturing establishments under consideration, and will probably be built shortly.

Good Water. Free Public Schools and Churches. Health and Climate Unsurpassed.

Drainage excellent. Splendid opening for men of *push and energy*. No "Old Fogy" element here.

No better point for *profitable investment*.

◆ Sites for Manufacturing Enterprises, ◆

And for Free Public Schools and Churches

Donated by Sheffield Land, Iron & Coal Company.

Population January 1st, 1887, 700; now, (August 21st, 1887,) by actual count, 2,583. Increase of population, 300 per cent. in eight months, and only limited by accommodations.

Three years ago the site of Sheffield was cultivated as corn and cotton plantations, and was without a railroad. Numerous two and three-story brick business houses, and one and two-story dwellings have been, and are being erected. The class of buildings will compare favorably with those in cities of 20,000 inhabitants.

LIMESTONE of excellent quality for *fluxing iron* in unlimited quantities at the furnaces' sites. First-class building stone and brick clay abundant. Rich and extensive deposits of *brown hematite iron ore* within twenty miles, along the lines of *two Sheffield railroads*. The Sheffield & Birmingham Railroad runs through the heart of the *Warrior Coal Fields*, which abound in first-class *coking, steam, gas and grate coal*. *Timber* is abundant and cheap.

The *Memphis & Charleston Railroad* and the *Sheffield & Birmingham Railroad* are now in operation into Sheffield. The *Louisville & Nashville Railroad Co.* is now extending its *Nashville, Florence and Sheffield* division, which will be completed to Sheffield before the close of the year 1887. Surveys of three other railroads have been recently completed to Sheffield, which will soon be the *best combined river and railroad transportation center* in the South.

Every merchant and every established manufacturing enterprise is doing a profitable business. *More are needed.* For further information address

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HOISTING ENGINES FOR MINES, FURNACE AND FACTORY.

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OVER 300 STYLES AND SIZES.

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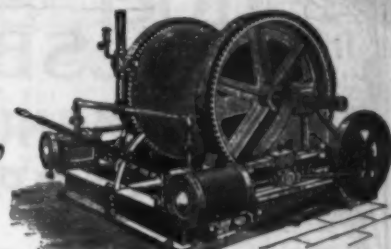
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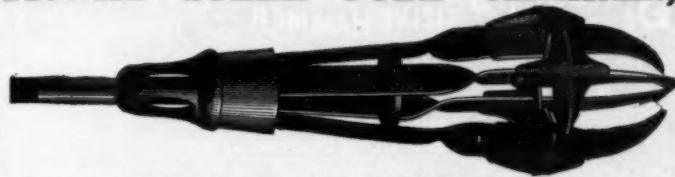
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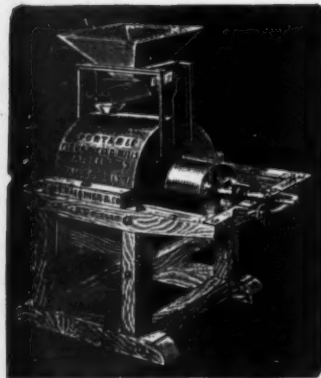
- It is superior to borax or anything else.
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- It both welds and refines at the same time.
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Any tool cracked in tempering can be welded by one application, and I positively guarantee that steel will not crack after it has been worked in the compound. Testimonials of its efficacy in hand from practical machinists in New York, Pittsburgh, Newark and other cities. Sold in bulk at 5 cents a pound. Address

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AND ALL OTHER KINDS OF OIL.

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LIGHT, ELEGANT, DURABLE



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* FIRE BRICK, *
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AND CULVERT PIPE.

Double Strength, with Improved Sockets.

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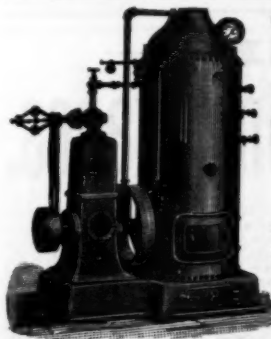
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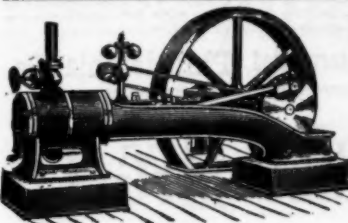
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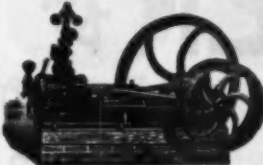
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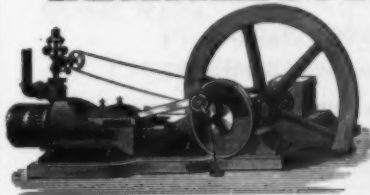
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ton Centennial Exposition of New
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Manufacturers of Portable and Stationary Engines and Boilers,
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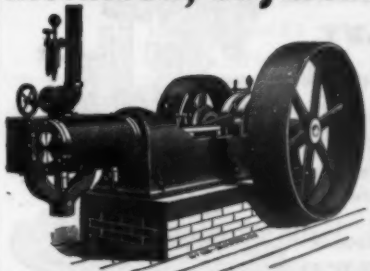
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COSTS LESS THAN ANY OTHER FIRST-CLASS ENGINE. Send for Photograph.**BLAST FURNACE ENGINES ON HAND.**

ALSO A STOCK OF OTHER ENGINES (our make.) Prices and description on application.

McIntosh, Seymour & Co., Auburn, N. Y.**Automatic Cut-off Engines**

5 to 300 Horse Power.

Economy in Fuel Consumption,
Close Regulation,
Great Durability and Simplicity,
Perfect Workmanship and Design.Unrivalled in these qualities, our engines are suit-
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ESTABLISHED 1863.PIPES, STACKS, BEAMS, ROOF TRUSSES
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Power. Like the Siemens Process of Making
Steel, it utilizes the waste gases with hot air on top of
the fire. Will burn all kinds of waste fuel without a
blast, including slack Coal, Sawdust, Logwood Chips,
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Stilwell's Patent Lime Extracting **HEATER AND FILTER** Combined.

The Only Lime Extracting Heater That Will Prevent Scale in Steam Boilers.

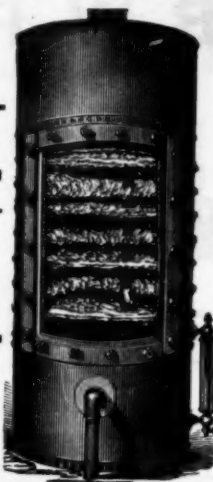
Removing all impurities from the water before it enters the boiler.

Thoroughly Tested.

Over 3,000 of Them in Daily Use.

This cut is a facsimile of the appearance of a No. 5 Heater at work on ordinary lime water, when the door was removed after the Heater had been running two weeks. Illustrated Catalogue Free.

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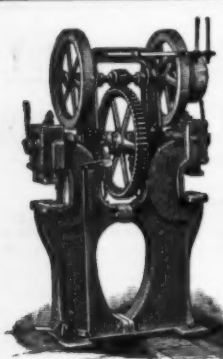


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- Two 9½ x 12½ Plain Slide Valve.
- Six 6½ x 8½ Automatic; also,
- One 8 x 9 Vertical, second hand.
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- One 6 horse-power Baxter.
- One 6 horse-power Taylor Portable.

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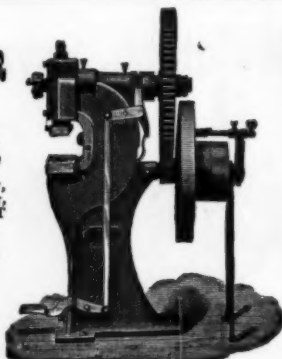
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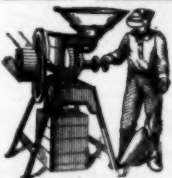
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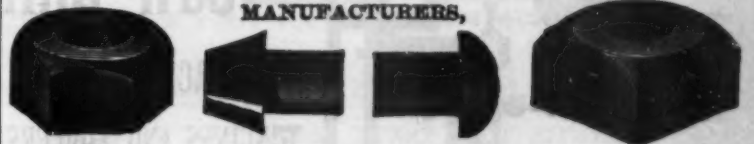
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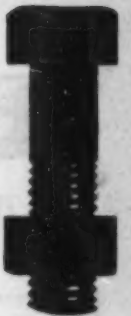
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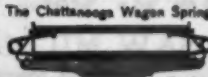
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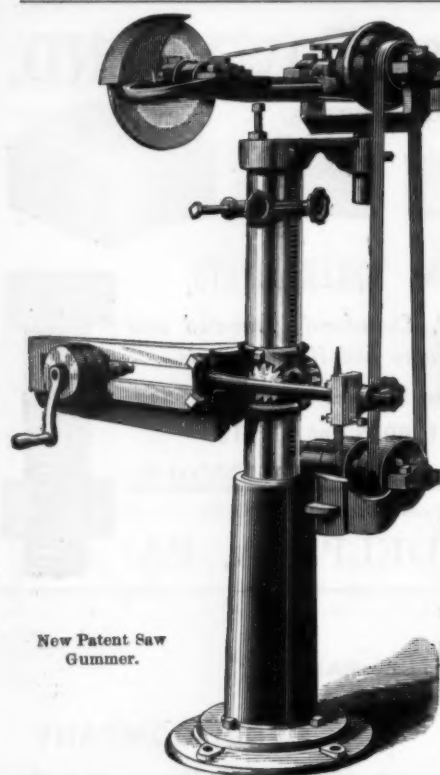


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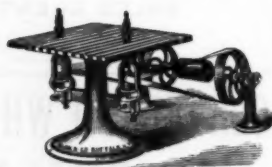
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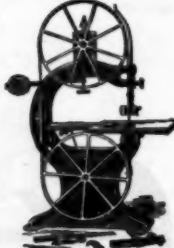
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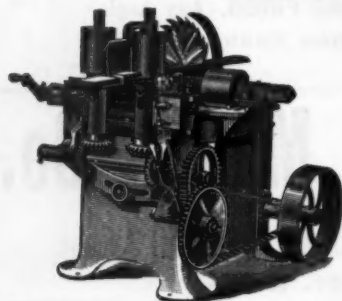
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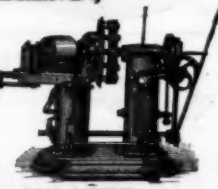


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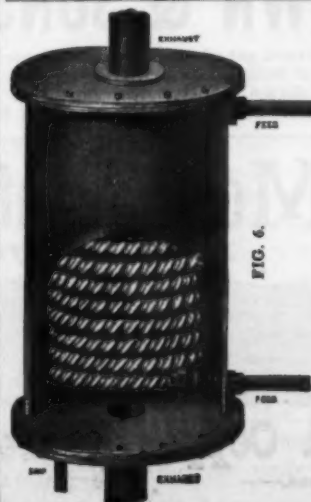
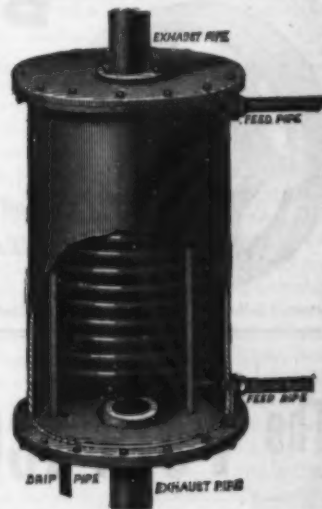
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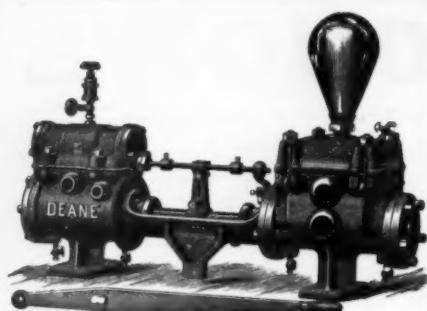
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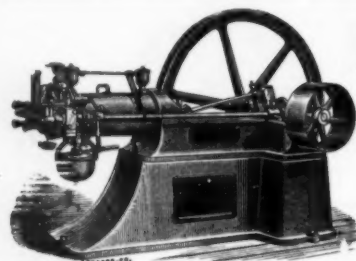
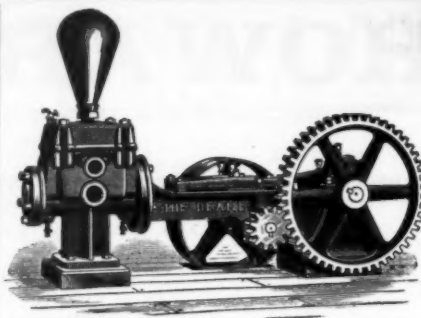
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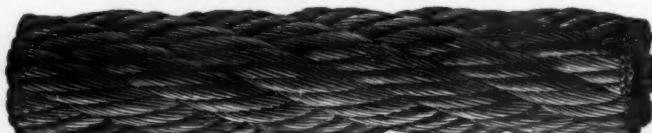
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BALTIMORE, OCTOBER 8, 1887.

WE take great pleasure in announcing that the admirable series of letters on the industrial and agricultural resources and growth of the South, written by Hon. Wm. D. Kelley for the MANUFACTURERS' RECORD, will shortly be re-published in book form. The great attention that these letters have attracted made it advisable to gather them together in one handsome volume. Within a month or two the book will be issued and the prospects indicate a very large sale, both in America and in Europe.

Mississippi's Big Crops.

Our Aberdeen correspondent, who knows almost every foot of ground in Mississippi and is thoroughly posted as to the crop prospects of the entire State, writes us, in a private letter, as follows:

You will observe that the Agricultural Department's report for Mississippi for September differs very little from my corn estimate, printed by you in August, and I know I am right. 30,000,000 bushels is a minimum estimate, and the outcome will be nearer 40,000,000. The counties named by it as short have all made heavy corn crops, as I can prove to you, and its report for Mississippi on pea crop and sweet potatoes is simply bosh. There is no crop so little affected by drought in our country as peas. They form a dense mass of shade, preserving beneath them at all times a moisture of soil incident to reflected exhalations, and the pea crop is simply enormous this year.

MESSRS. BAKER & HALL, bankers of Cartersville, Ga., write us as follows:

"We enclose you our check for \$3 to pay for the MANUFACTURERS' RECORD. We feel proud of your paper because you have done more than any half-dozen other papers in the United States, to show up the vast mineral resources of the South; but the half is not yet told as to what we have in this section."

THE United States Government has decided to build a 6,000 ton war vessel, to cost nearly \$2,500,000, at Norfolk, Va. This is but another sign of the growing industrial power and influence of the South.

THERE are too many people following Mark Twain's advice, "never do to-day what you can put off till to-morrow, because to-morrow you may not have to do it." We are sorry to say that some of this class are still found in the South.

Alabama's Future as a Type of What the South Will Be.

The growth of the industrial interests of the South has been so wonderfully rapid during the last few years that many people, who have failed to appreciate the magnitude of the natural resources on which this progress is based, have wrongly imagined that this development must in a few years reach its limit. They cannot comprehend, because they have not studied the subject, that the South's growth can be rapid for generations to come and yet the limit be not reached.

This point can probably be best illustrated by taking one State, Alabama for instance, as a type of the South and comparing it with Pennsylvania, the typical wealthy State of the North, combining tremendous industrial interests with great agricultural prosperity. If it can be shown that Alabama in itself has greater possibilities than Pennsylvania, and is destined in time to surpass the latter in industrial and agricultural wealth, it will be readily admitted that the former has as yet scarcely laid the foundation of its industrial structure. This can be better understood when it is remembered that in 1880 the value of the manufactured products of Pennsylvania was \$744,818,445, or nearly \$300,000,000 greater than the combined value of the manufactured products of the entire fourteen Southern States in that year, and 57 times greater than the value of Alabama's manufactured products in the same year. In other words, against Pennsylvania's \$744,000,000 Alabama had less than \$14,000,000 as the value of her manufactures in 1880. The assessed value of personal property and real estate in Pennsylvania in 1880 was \$1,683,450,016, against \$122,863,228 in Alabama. In 1880 Alabama had a population of 1,262,344, while Pennsylvania had 4,282,891; Alabama had 2,070 manufacturing establishments and Pennsylvania 31,225; Alabama had only four towns or cities having a population of over 4,000, while Pennsylvania had fifty-six.

These statistics show what a tremendous progress Alabama must make before she attains even unto Pennsylvania's wealth and population in 1880. To do this she must nearly quadruple her population; increase the capital invested in manufactures from \$9,600,000 in 1880 to Pennsylvania's \$475,000,000; the value of the products of her factories from \$14,000,000 to \$744,800,000; the value of her assessable property from \$122,000,000 to \$1,680,000,000; the number of her factories from 2,000 to 31,000, and her present railroad mileage from 2,104 miles to Pennsylvania's 7,445 miles.

Doubtless many will say that all this is impossible, and that Alabama can never attain unto Pennsylvania's material greatness. This is not, however, to show that Alabama will overtake and surpass Pennsylvania, for

the latter State is still pressing forward in development, though even this may be done, but is simply designed to show what immense strides Alabama must make for years to come even to reach where Pennsylvania stood in 1880.

Can this be done? Undoubtedly. If this answer is correct then there need be no fear of Alabama (and Alabama is here used as a type of the whole South) developing too rapidly or of the limit of her healthy progress being reached for many generations.

Now if Alabama has greater advantages and resources of minerals, timber, soil, climate, watercourses, &c., than Pennsylvania, and if all these can be utilized to better advantage, and her minerals more easily and cheaply developed, then there is no reason why Alabama should not become as populous and as wealthy as Pennsylvania. The total area (land surface) of Alabama is 51,540 square miles, and of Pennsylvania 44,985 square miles, or a difference of 6,600 square miles in favor of the former. The timber resources of Alabama are immense. In 1880 there were 21,192,000,000 feet of standing pine, while Pennsylvania had only 1,800,000,000, or not one-tenth as much as the former State. Of Pennsylvania's timber interests the census report says: "Merchantable pine has now almost disappeared from the State, and the forests of hardwood have been either replaced by a second growth, or have been so generally culled of their best trees that comparatively little valuable hardwood now remains. * * * From all parts of the State manufacturers using hardwood report great deterioration and scarcity of material, and Pennsylvania * * * must soon lose, with its rapidly disappearing forests, its position as one of the great lumber-producing States." On the contrary, Alabama, in addition to its immense pine forests, is reported as having much of its territory covered with a rich and varied forest growth of broad-leaved trees, in which oaks, hickories, ashes, walnuts and cherries abound, while there are also great regions covered with heavy forests of cypress, a very valuable timber. Alabama has the material for more than duplicating Pennsylvania's 2,800 lumber mills, with their \$21,400,000 of capital, and this will be done as the demand for lumber and wood-work generally increases.

Alabama has nearly 11,000 square miles of coal area, larger even than the entire coal area of Great Britain, and but slightly less than Pennsylvania's. Her iron ore mines are absolutely inexhaustible, according to all human calculations. As to whether Alabama is to exceed Pennsylvania in her coal and iron interests, the foundation of the latter's enormous wealth, we prefer to give the testimony of others, whose judgment cannot be questioned. Hon. Abram S. Hewitt, of New York, whose long experience in the iron trade makes

him fully competent to express an authoritative opinion on such a subject, has said of Alabama:

"It is the only place upon the North American Continent where it is possible to make iron in competition with the cheap iron of England, as measured not by wages paid, but by the number of days' labor which enter into its production. The cheap place on the globe until now for the manufacture of iron is the Cleveland District, in Yorkshire, England. The distance of the coal and iron from the furnaces there averages about 20 miles. Now in Alabama the coal and ore are in many places within half a mile of each other. This region, so exhaustless in supplies, so admirably furnished with coal, so conveniently communicating with the Gulf, will be of infinitely more consequence to us for its iron than it has ever been for its cotton. *I think this will be a region of coke-made iron on a scale grander than has ever been witnessed on the habitable globe*"—(Italics ours.)

Stronger language could hardly have been used by the most enthusiastic friend of Alabama.

Col. A. K. McClure, of Philadelphia, one of the leading men of the times, and who could not be expected to praise Alabama at the expense of his own State, was so impressed with the magnitude of Alabama's mineral wealth and the cheapness of its development, that a year or so ago, after a careful study of the subject, he wrote a most interesting article, from which we take the following extracts:

"I have studied the resources and opportunities of the State with special interest, because they are certain to revolutionize some of our chief sources of wealth in Pennsylvania, and the more they are studied the more clear it must become to every intelligent mind that England is not to-day more the rival of the Keystone State in the future production of iron and coal than is Alabama. There is not a source of mineral wealth in Pennsylvania, excepting only our oil product, that is not found in Alabama in equal or greater abundance, with the matchless advantages of climate, of easier and cheaper production, and of vastly cheaper transportation. Nature's great gifts to Pennsylvania have been not only liberally supplemented in Alabama, but to them have been added every possible natural advantage for their cheap development and delivery to the markets of the world. If half the capital and business direction that have been given to make Pennsylvania peerless in the production of mineral wealth had been given to Alabama, her productive wealth would be as great as that of the Iron State, and her population would be nearer five millions than the million and a quarter now scattered over the boundless but almost untouched riches of this sunny Commonwealth. It is admitted that iron can now be produced in this State \$6 per ton cheaper than in the reasonably favored iron centers of Pennsylvania, and that is a certain index of the industrial revolution that is rapidly approaching. What has been done in Birmingham not only can be done as well in many other parts of the State, but it can be even more profitably done in Birmingham and elsewhere in Alabama as soon as the great natural highways of the State shall be made available; and no citizen of the North of fair intelligence can review the slumbering wealth of Alabama and the waterways which offer the cheapest transportation without accepting the conclusion that the next generation will see this State an iron and coal center equal to if not surpassing Pennsylvania, (italics ours) and Mobile the great coal depot of the coast. * * * It is idle for Pennsylvania and other great iron and coal producing States to close their eyes to the fact we have

reached the beginning of a great revolution in those products. No legislation, no sound public policy, no sentiment, can halt such a revolution when the immutable laws of trade command it; and the sudden tread of the hordes from the northern forests upon ancient Rome did not more suddenly threaten the majesty of the mistress of the world than does the tread of the iron and coal diggers of Alabama threaten the majesty of Northern iron and coal fields. * * *

It must be remembered that Pennsylvania has reached the minimum cost in the production and marketing of her iron, while Alabama can and will greatly cheapen the delivery of her iron in the great centers of trade. And what is true of iron must be equally true of coal. They are twin sisters whose development must keep pace with each other. Nova Scotia will soon learn to fear Alabama more than the small tariff now imposed upon her imported coal, and instead of extorting double prices for bituminous coal, as she did in the early days of the late war, before protection had developed our Northern mines, she will find Alabama crowding both herself and Pennsylvania in the New England factories, and with the waterways of the State perfected, even England will have to look to her laurels in the Central and South American States. These lessons come upon us plain as the noonday sun, and it is midsummer madness not to read them understandingly. We cannot war with destiny; we cannot efface the beneficent gifts of Him who leads the waters to the sea and sends them back in the dews and rains of heaven. Alabama has been gifted far beyond even our boasted empire of Pennsylvania, and only the Southern sluggard has hitherto given the race to the North. Now there is a New South, with new teachings, new opportunities, new energies and manifestly a new destiny, and the time is at hand when a large portion of the great iron and coal products of the country which enter competing centers will be supplied cheaper from Alabama than from any State in the North. How Pennsylvania will solve the problem I do not assume to decide; but the logical result would be the transfer of the portion of the iron industry that can best prosper here from the North to the South, just as the spinning and weaving of the home consumption of cotton must soon come to the cotton fields, and the better water-power and climate which they furnish. * * *

With the marvelous progress made here when stagnation prevailed in all the coal and iron centers of the North, what must be the strides of this industrial center when prosperity comes to revive the same industries in Pennsylvania? This country will draw the young men of energy from the coal and iron mountains of Pennsylvania just as the fertile prairies of the West have drawn the young men of energy from our Pennsylvania farms, and there is room for thousands of them with better prospects of success than in any new State or Territory of the Union. These are strong expressions, but I write them only after the most exhaustive inquiry and careful examination, and I know that they are fully warranted. This is the coal and iron empire of the South, and, I believe, the future coal and iron empire of the United States, and it has a climate and soil adapted to the bountiful growth of everything grown in Pennsylvania, with one-sixth of the entire cotton crop of the South added. It is the equal of Pennsylvania in forest, field and mine, with climate, natural highways and cheapness of product turning the scales in profit by them."

Surely such testimony cannot be questioned.

Col. McClure says, and says truthfully, that Alabama is the equal of Pennsylvania in forest, field and mine, and superior in climate, natural highways and cheapness of product. There is, therefore, no reason why

Alabama should not surpass Pennsylvania in wealth and population. Our readers can form some idea of how long it will require to do this even at the tremendous rate of progress that she is now making.

Alabama—and the South—can grow for generations as rapidly as they are now doing, and still the great development will not be overdone. The South is solid.

The Wideness and Fertility of the Southern Investment Field.

Messrs. Cordley & Co., bankers, of Boston, Mass., in their financial circular of October 1, say:

The search for causes of the recent constipation of the money market has established a fact that the industrial condition of the country at large seldom or never has been so flourishing. Every effort has failed to find flaws of size enough to account for the stringency, and the searchers are driven to attribute it in part to the national prosperity itself as an absorbent of currency for its enterprises and operations. Perhaps there is no more impressive illustration of their vast and rapid extent than the statistics of industrial progress of the Southern States for the last nine months, published to-day in the MANUFACTURERS' RECORD, showing an investment of \$212,455,000 there, as against \$83,834,200 in the corresponding three quarters in 1886. These figures are so great that the high authority which compiles them can well afford to accept whatever abatement of their magnitude may result from pointing out that they estimate capital stock at par, which in many instances was not fully paid up. Even with that abatement they are marvellous in comparison with any previous period in the history of the South. And yet the Southern field is so wide and fertile that no part of it yet is over-cultivated. Where the development thus is natural, any scarcity of money attributable to it may be compared with a deficiency of reapers for a rich grain field. The planters gather them from elsewhere with all the speed they can, and it should not be surprising if they thereby reduce the supply in some other places below the requirements for the harvest in those places. But this is not a sign of distress for the country, on the contrary, it is an inconvenience springing from the redundancy of its prosperity.

In Mr. Helper's last Louisville letter, in giving the price of real estate, it was stated that the average value of inside lots for workingmen's houses was \$65. This of course was a typographical mistake. The figures ought to have been \$15. The boast of Louisville is the cheapness of good homes for the laboring classes, and the low cost of land for their dwellings. This is a strong point, and must do great good for that prosperous and progressive city.

GADSDEN, ALA., claims to have discovered a splendid coking coal.

THERE comes to our office weekly from Baltimore, a publication bearing the title of the MANUFACTURERS' RECORD. It is a publication devoted to the promotion of Southern interests generally, but especially to its manufacturing improvements. It is a valuable print, and contains, besides many really interesting and instructive articles, a mass of information about what is being done in the Southern States toward the increase of manufacturing facilities.—Washington (N. C.) Gazette.

SOUTHERN COTTON MILLS.

Prosperous Times—Good Dividends—Great Improvements.

MANY NEW MILLS.

The MANUFACTURERS' RECORD has repeatedly presented the statistics of the growth of the cotton mill industry in the South, but so many enlargements and improvements to old mills are being made, and so many new mills are under construction, and the earnings of the mills are so good, that a few additional facts gathered from our recent issues will prove of interest.

During the severe depression a few years ago, cotton mills, like all other enterprises, made but little money; but, on the whole, well managed Southern mills held their own to such good advantage as to demonstrate beyond question that this industry could live even during the very dullest times and do better than Northern mills. The return of good times brought renewed prosperity to the cotton mills, and so we find that they are paying splendid dividends again. Among the earnings of different mills recently reported, the Crown Cotton Mill, of Dalton, Ga., after allowing a part of earnings for improvements, have just declared an annual dividend of 25 per cent.; the Trion Mill, of Trion, Ga., earned for its fiscal year just ended 16 per cent.; the Odell Manufacturing Company, of Concord, N. C., have declared 10 per cent. for six months; the Griffin Manufacturing Company, of Griffin, Ga., for the year ended August 1 made a net profit of 24 per cent., and are so well pleased that they contemplate building another mill. The Yacona Mills, of Water Valley, Miss., made 17 per cent. on spinning operations, putting in 150 looms.

These are but a few samples to show how Southern mills are prospering.

Most of the mills have orders well ahead of production, the 12 or 15 mills in Randleman County, N. C., all report having sold production up to next January. The mills now in operation are in many cases being enlarged and improved, adding the latest machinery, while in some cases entirely new mills are being built by old established companies.

In South Carolina there is great progress in this direction. The Pacolet Manufacturing Company, whose capital is \$300,000, now running a magnificent 12,000 spindle mill, are building an additional mill to double their capacity, while the Pelzer Manufacturing Company, capital \$500,000, are so well satisfied with their great mill of 600 looms and 22,000 spindles that they have another big mill under contract, which, when completed, will give them one of the most extensive cotton manufacturing plants in the country. The Huguenot Mills at Greenville are enlarging and will put in more machinery, while the Fork Shoals Manufacturing Company have

bought largely of new machinery. At Marion a \$100,000 mill is to be built; at Laurens a mill has been decided upon, and 11 miles from there the Mountain Shoals property has been purchased for the purpose of building a new mill by a \$500,000 company. Col. H. P. Hammett, of Greenville, one of the most notably successful cotton manufacturers of the country, in connection with leading Northern and Southern capitalists, is to build another \$500,000 mill at Greenville. The Clifton Manufacturing Company, capital \$500,000, now running a mill with 23,000 spindles and nearly 600 looms, will build an additional mill to cost \$300,000; at Bennettsville a \$200,000 cotton mill company has been organized; at Columbia a \$250,000 company; and at Fort Mill a \$160,000 company. The Ware Shoals water power property has been bought as a site for a new mill. The Darlington Manufacturing Company are putting in a large amount of machinery. At Greenwood, Spartanburg, Anderson, Chester, Camden and other points, cotton mills are projected with good prospects of their being built.

In North Carolina cotton mills are being built so rapidly that that State promises to become the Southern center of this industry, unless South Carolina disputes with her for this position. In South Carolina they build only big mills, while in North Carolina the fancy is, and has been for years, for small mills, but many of them.

At Lincolnton, Daniel Rhyne is building a \$30,000 mill; at Big Falls a \$60,000 company will build; at Concord, already a cotton manufacturing town, the Cannon Manufacturing Company will build a \$75,000 mill, with 4,000 spindles; and the Lore Mills, another new company, will also build. Mark Morgan, Fayetteville, has purchased property and will establish a cotton mill; at Enoree the Henrietta Mills, to cost \$200,000, will be put up; at Hickory, A. A. Shuford is reported as to start a new mill; Shelby has one new mill, 3,000 spindles, about finished, and another one under contract; at Monbo a new company has purchased an old mill and refitted it, and started up; at Davidson College two small mills are to be put up. Among the mills that have put in considerable new machinery or made enlargements, are the Enterprise at Fout's Mills, Odell at Concord, Empire at High Point, Oakdale at Jameson (additional mill), Hope at Fayetteville, Meadow at Oxford, Newton at Newton, Falls of Neuse at Haw River, the Randleman, Cedar Falls, Naomi, Wilmington, Elm Grove, Altamahah, Central Falls, J. M. Worth and others.

Besides all these, a number of new mills are projected in different places in the State.

In Georgia cotton mill business is thriving also. The Swift Manufacturing Company, of Columbus, have

added 8,000 spindles; the Muscogee of the same place have built an additional mill for 400 looms; the John P. King Manufacturing Company, of Augusta, have added 3,000 spindles and 70 looms; the Augusta Factory has spent \$20,000 in improvements; the Porter Manufacturing Company, of Clarksville, are building a cotton mill; a company has been organized to build a mill at Americus; a \$50,000 mill is under construction at Gainesville; the Eagle & Phoenix, of Columbus, have added \$35,000 of machinery; the Enterprise Manufacturing Company, of Augusta, have purchased more machinery; the West Point Manufacturing Company, of West Point, are rebuilding a \$250,000 mill and the Union Milling & Manufacturing Co. of the same town contemplate building a mill for batting and cotton goods; the Crown Mills, of Dalton, are adding 50 per cent. more machinery; a \$50,000 bleachery company has been organized at Augusta; H. Howard has started a new factory at Columbus; the Arkwright mill, of Savannah, Girard Knitting Factory and other mills have also put in new machinery.

The Riverside Cotton Mills, of Danville, Va., are building an additional mill, 3 stories high, 75x220 feet; a company has been incorporated to build a mill at Roanoke and the Suffolk Manufacturing Company have put in considerable new machinery.

The Laurel Mills, of Maryland, are being enlarged and improved at a cost of \$250,000; the great Mount Vernon Manufacturing Company, of Maryland, probably the largest cotton duck manufacturers in the world, have paid \$75,000 for an idle mill which will be improved and started up as a part of their immense plant. At Elkton \$30,000 is being spent in improving the Elk mills, and three large hosiery factories have lately been started in the State.

At Galveston a \$500,000 company is building a bagging and cordage factory to which they expect to add a \$1,000,000 cotton mill; the Dallas Cotton & Woolen Mills have commenced work on a great \$500,000 mill in close connection with which there is to be a clothing factory to employ several hundred hands; the Farmers' Alliance through its various branches has decided to build a \$100,000 mill at Dallas, one of the same size at Waco and duplicates at Denison, Temple, Tyler, while negotiations are in progress for others; at Fort Worth Samuel Evans and others expect to build a \$100,000 cotton and woolen mill.

In Tennessee the Annis Cotton Mill Company has been purchased and refitted with new machinery; the Nashville Cotton Mills, now running 8,000 spindles and 100 looms, are building another mill for 5,000 spindles; the Athens Manufacturing & Mining Company expect to build one or more mills; the Rockford Cotton Mills have added \$11,000 of machinery,

while the Brookside Mills of Knoxville have put in a good deal more than that; the Chattanooga Cotton Factory has been sold and its capacity will, it is said, be quintupled; the Crescent Cotton Mills, of Lawrenceburg, lately burned, are being rebuilt on a larger scale.

Reports from other points likewise show considerable activity in the improvement of old mills and the purchase of new machinery.

Surely this is a record of progress in the cotton manufacturing interests of which the South may well be proud. It shows that in the industrial development that is going on cotton manufacturing is keeping fully abreast of the line.

The MANUFACTURERS' RECORD believes in cotton manufacturing at the South, and its faith receives the best possible practical indorsement by the long array of new mills that are being put up by the most experienced cotton mill men of the South. They have tried the business through times of adversity as well as through periods of prosperity, and they show their experience by building additional mills. We are in favor of building cotton mills, (1) because the South ought to manufacture its own raw material into finished products; (2) because the greater the number of mills the greater will be the prosperity of all the mills; (3) because they furnish employment to thousands of hands that would otherwise be compelled to remain in idleness and, (4) because we believe that the record of the past shows that with as few exceptions as can be found in almost any line of industry, well managed Southern mills have yielded good profits to their owners.

The International Yacht Race.

The thoughts of shipbuilders the world over were last week centered upon the international contest between a Scotch and an American yacht. It was not the mere interest always excited by a stirring game between competitors of distinguished skill or by a race between horses of great renown, nor was it the interest that those feel who have staked heavily upon an event open to chance. All these things are trivial as compared with the feelings evoked by the trial between the Scotch cutter and the Yankee sloop. There was a question at issue of much greater moment than the keeping or losing of the Queen's cup, which was won years ago by an American ship and crew in British waters, and has been cherished on this side as a trophy of the superiority of our marine architects and of our seamanship over those of our British cousins. This issue has remained unsettled ever since, for British shipbuilders and sailors have held to the belief, although defeated in every attempt to confirm it, that their models were better than ours, and that they would eventually prove it and carry back the coveted trophy to

England. This year the blood of the shipbuilders of the Clyde and of all patriotic England was up. They determined to construct a cutter that should sail faster than any that ever floated. Hence the Thistle, the pride of the hearts of her designer and builder, and for that matter the pride of all true Britons. Her owners brought her across the ocean, and when our naval architects saw her fair proportions and appointments they were somewhat shaken in their faith as to the ability of the Yankee sloop. The two races proved their fears to be groundless. The Volunteer won; the Thistle lost the race. It has been established once again that Americans can build and sail ships better than their European competitors.

Now comes the practical question. If this be so, why is it that the ships of other nations are doing the bulk of the American carrying trade? Why is it that we have but about 800,000 tons of shipping engaged in foreign trade while England has 6,000,000 tons? Why has the United States but about 40 steamships with a tonnage of 75,000 crossing the ocean, while England has 3,000 steamships with a tonnage of 3,000,000? Mr. Aaron Vanderbilt, superintendent of the New York & Cuba Mail Steamship Service, attributes this unfortunate and disgraceful state of affairs to the bounty laws of European countries. Capt. Ambrose Snow, of New York, a large owner and a man as thoroughly well-informed on the condition of American shipping as any one in America, says:

"The German, the French, the Spanish, the Italians have had free-trade in ships for many years, but still found themselves obliged to resort to some plan which would prevent the loss of their merchant marine and all that is implied in its loss. In France construction bounties are granted upon the gross tonnage of the vessels built in France, amounting to \$11.58 per ton for iron or steel vessels; \$7.72 for composite vessels; \$3.86 per ton for wooden ships of over 200 tons. For every 225 pounds of machinery placed on board \$3.32 is allowed. A navigation bounty is also paid at the rate of 29 cents per ton for each 1,000 miles traveled in the foreign trade. This bounty is reduced 1 cent per ton for each year an iron vessel has been afloat, and 1½ cents in the case of wooden vessels. Vessels built of iron, according to the plans of the Navy Department receive 15 per cent. additional bounty. Twenty per cent. of the navigation bounties is retained and placed to the credit of the pension fund for seamen. The act passed in 1881.

"In Italy a bounty is based upon tonnage for iron and steel ships built and registered in Italy at the rate of \$5.70 per ton; \$1.92 for indicated horse-power on machinery; 58 cents per 100 pounds upon boilers, and a bounty upon navigation of 13 cents for every 1,000 miles steamed from Italy to non European ports.

"The Spanish government has a finely graduated system of bounties, especially favorable to Spanish ships engaged in the West Indian and South and North American trade. It is stated that under this system the Spanish steamers that run from Havana to New York get over \$4,000 from the government for each round trip."

The Marine Journal of New York, which is the devoted champion of American merchant marine interests, commenting on this subject, says:

"Meantime Congress has for years neglected American shipping interests in every

way, and if it has now and then taken some legislative action to benefit it, the object has been defeated, as it was recently by a Postmaster-General setting aside the will of Congress."

This serious accusation is well founded, unpleasant as it is to confess it, but it is only one incident of the many continually occurring to show how little the majority of our public men understand the importance of a first-class merchant marine to every industrial interest of the United States. They will toss up their hats on excursion steamers when an American yacht crosses the winning line, and quaff bumpers of champagne in honor of the victory, but when asked to put to some good purpose the lessons these contests teach, and to do something practical for the restoration of American commerce on the high seas, their enthusiasm is as dead as the remnants of champagne they left in their glasses. The South has a great and vital interest in this question. The MANUFACTURERS' RECORD trusts that there will go out from the Birmingham convention next month such an earnest protest against the continuance of this folly as will be heard and heeded by every member of Congress, and result in solid good to the American merchant marine.

The Treasury Surplus.

Ancient Rome had her Forum, where were publicly discussed all questions of vital interest to her people. In our day and generation, pulpit, bar, bench, lecture platforms and the stump, but above all, the daily press and the periodicals, supply a more effective substitute to the American people. There are among the last named publications several that devote all their space to the questions of the hour, and treating them with broad Catholicity, open their columns to discussions by those who everywhere are recognized as leaders of the various phases of thought which divide the people. Among these is the Forum, which has just entered upon the fourth year of a successful career, its October number just out being the second of its quadrennial. In this we note two articles that will be widely read, one by Hon. John G. Carlisle, Speaker of the House of Representatives, the other by that veteran Statesman, Judge Wm. D. Kelley, of Pennsylvania. No two men of high character stand further apart on questions of public policy than do these gentlemen. The one is a free-trader and a democrat, the other a republican and a protectionist. It so chanced that while each had a different subject to consider, each found himself in the course of his argument either favoring or opposing the same measure, viz: the internal revenue law. This independent discussion of the same subject is, under the circumstances, most significant. They are led up to it by the dangers involved in the extraordinary accumulation of money in the federal treasury. How to relieve the

country of that danger is the chief theme of each, and on this their views are in direct antagonism. Speaker Carlisle proposes to retain the internal revenue tax and to reduce the duties on imports. Judge Kelley argues for the abolition of the entire internal revenue system and for a judicious revision of our tariff laws. In maintaining his position this wise statesman shows that he is not advancing a new thought, but is urging what have long been his decided convictions. He cites from an address read before the National Convention of Manufacturers' in 1881, a paragraph in which he declared that "to refuse to abolish at the earliest practicable day our whole system of internal taxes, except the tax on notes other than those of national banks, would show a disregard of the teachings of the fathers and the cherished traditions of the people." He quotes also from an article published in the *International Review* for October, 1882, under the caption, "Our excessive revenue is engendering national corruption," in which he showed the dangers of the excessive annual revenues of the government and expressed the apprehension that "it may require a repetition of those emphatic protests against internal taxation as a peace measure, known as Shay's Rebellion and the Whisky Rebellion, to force the repeal of these taxes." Judge Kelly explains that his apprehensions were not without reason, by narrating the course adopted by the House of Representatives at the first session of the 47th Congress. He, as chairman of the Committee of Ways and Means, had drafted a bill for submission to his associates, which would have reduced the annual revenues by something more than \$50,000,000. Before he could do this the caucus of his own party virtually took the subject from the committee's control that it might be prevented "from reporting a measure for the reduction of taxes on distilled spirits or fermented liquors," or for making anything like a general reduction in tobacco taxes. As chairman of the committee he protested against this outrage, (for it was nothing less), and he pleaded in vain "in the name of his party and his country, for the privilege of presenting the facts which must control financial events." But he was silenced by his own political associates who obeyed the orders of the "Republican Steering Committee" of the 47th Congress. The minority party in the House would take no action in the line of policy Judge Kelley proposed. Thus it came about that "the Act of March 3, 1883, injected into the tariff law so many hurtful and incongruous provisions."

The blunders of that time are now daily disclosing themselves, in the dangers arising from the treasury surplus. Judge Kelley believes that these might have been averted if his bill had been enacted, for "its object was to prevent the possibility of the

accumulation of an excess of revenue in the treasury," while "the revenues of the government would still have been ample to meet all demands against it." To prove this the writer gives a tabulated statement of the sums collected for taxes on tobacco and fermented liquors for the past five fiscal years, the aggregate of which amount to \$247,404,438.64. Had the proposed bill become a law "the position of the government at this time would show its annual revenue diminished by more than \$50,000,000, and a liability for outstanding 3 per cent. bonds which it could call as its revenues would permit. It is a pity in the light of what has since occurred and especially within the past month, that supposed party necessities prevented the passage of Judge Kelley's bill.

In answer to the question why, if a large surplus in the treasury is inimical to the preservation of commercial prosperity, it would not have been wise to insure the repeal of excise taxes by consenting to an equal abatement of customs duties, Judge Kelley says: "My object being an assured abatement of the national income, the reduction of protective duties was not adapted to the end in view. The propositions are inconsistent, and if tried together the influence of each on the current volume of revenue would neutralize the other." The reason for this is that when revenue taxes are wiped out, that ends the income from them, and it is known in advance by about how much that will reduce the receipts of the treasury. On the contrary, it is the experience of this and other countries that a reduction of duties below the protective point invites such an increase of imports of competing commodities as to augment the income of the government. That the reduction of duties by which a government has promoted a diversification of industries and a development of latent material resources to rates which are no longer protective, will be followed by increased imports and revenues is freely conceded by free traders. "In fact, this is one of the very few dogmas of political economy that are universally accepted."

But had it been possible for Judge Kelley to consent "to the proposed dicker of a protective duty for an excise tax," he could not have done it, have consented to it then, for the preliminary report of the tenth census had just shown "that, under the benign influence of two decades of protective tariffs we had passed from the humiliation we had endured under tariffs for revenue only of being a commercial dependency to the proud position of the first manufacturing nation of the world, with an internal commerce greatly in excess of England's home and foreign trade combined. Our manufacturing establishments * * * numbered 253,852, employed \$2,790,272,606 of capital, and paid American rates of

wages to 2,738,895 operatives." With facts like these before him Judge Kelley could not "consent to endanger any part of these magnificent elements of national prosperity and power."

"There are but two methods by which the amount of revenue collected from customs duties may be certainly diminished. They are, first, the transfer of commodities from the list of dutiable articles to the free list; and, secondly, the maintenance of such rates of duty as will stimulate the development of the latent resources of the country, through the labor and enterprise of our own people, by guaranteeing to them reasonable advantages in our home markets over foreign competitors who neither contribute to the revenues of the government in times of peace, nor fight its battles in war." * * *

"Ireland, Egypt, Turkey and British India illustrate the effects of the former, and the progress of our country since 1861 the latter method."

After stating succinctly the peculiar condition of the national treasury, which was locking up the money of the people, "that should be employed in rehabilitating the impoverished South and in otherwise adding to the wealth of the people and the power and glory of the country," the writer proceeds as follows: "The interests of all our other manufacturing industries are antagonized by three affiliated monopolies, each of which owes its existence to the provisions of the internal tax laws, viz: the distillers of spirits from grain, known as the Whisky Ring; * * * the few wealthy manufacturers of tobacco, in whose hands the invidious and oppressive provisions of the tax law have concentrated the entire tobacco trade of the country; and thirdly, the Brewers' Association." These different elements are able to prevent action against the revenue law, because, in addition to the support of saloon keepers and their customers, they have that "of hosts of misguided champions of temperance and religion," and of the 4,000 federal officers to whom the Internal Revenue Bureau pays annually more than \$4,000,000. "In view of these portentous facts," the writer asks "why immediate action should not be taken for the abolition of these sources of surplus revenue and the overthrow of the demoralizing influences which aspire through their continuance to the control of our national financial and industrial policy?"

It is not often that an essay on finance is made the vehicle for a temperance argument, but in this instance it has been done, and done admirably well. The MANUFACTURERS' RECORD would suggest to those engaged in disseminating temperance literature that they republish Judge Kelley's timely paper on the treasury surplus and scatter it broadcast through the country. It is the best and most practical, as well as the briefest, argument for the cause of temperance that has appeared of late years, and if widely read it would tend to create a public sentiment that would be felt in the legislative halls of every American State.

BRISTOL-GOODSON.

**A Twin City in the Blue Ridge Mountains
Dividing Two Commonwealths.**

**A Thriving and Prosperous City in
East Tennessee and Virginia.**

**A Future Steel and Iron Mart of
the South.**

**Progress, Development and Activity
Seen on Every Hand.**

[Special correspondence MANUFACTURERS' RECORD.]

BRISTOL, TENN., September 27, 1887.

Civilization in all lands and in all ages has grown up from small centers and humble resources. A man, a house, a village and a machine, are the starting points of new and grand developments of commercial success, social life, and municipal, State and national history. The world is full of such records, that find illustration and culmination in the fame and wealth and power that give success and triumph to personal enterprise, and grandeur to the august and stately march of progressive nations.

Not many years ago, the solitude of the vast forests that surround what are now the thriving towns of Bristol-Goodson, was sparsely settled. Looking back but a few years this place was regarded only as a stopping point on the line of railway where a handful of our versatile forefathers, combined in each the protean character of soldier, huntsman, herdsman and farmer, laid the axe to the root of the tree, fostered the emblems of agriculture, and thus began broad and durable foundations for one of the most thriving and prosperous towns in the South.

A TWIN CITY DIVIDING TWO COMMON-WEALTHS.

Bristol-Goodson, the former in Tennessee and the latter in Virginia, the two the dividing line between the two States, are located nearly equi-distant between the North and South forks of the Holston river. Situated on and running along the line between the States of Tennessee and Virginia, occupying a high and commanding position, Bristol is easily accessible by means of two great trunk lines of railways, the East Tennessee, Virginia & Georgia and the Norfolk & Western and South Atlantic & Ohio Railroad, running into the mineral and timber lands of the two States. It is located in a productive and healthy region of country, surrounded by inexhaustible forests of timber for building, and yielding such an abundance as to make its trade in lumber a prominent business. It is contiguous to coal beds that are capable of yielding a supply of the best qualities of coal for manufacturing and household purposes. It lies in the center of a country abounding in mineral wealth, embracing all that are utilized in the various manufacturing industries, and is watered by some of the finest streams in the two States. The gradual and healthy growth of Bristol during the past few years is a happy augury for its future. With all the natural elements surrounding it there can be but one conclusion drawn regarding its future and that is: An onward march in the material and industrial development of the whole section. It only needs that a knowledge of the wonderful resources of this part of East Tennessee and Virginia, of which Bristol is the natural trade center, be disseminated, to attract the capitalist and the settler from the various sections of the country. Fortunes await all of capital and energy who will come and erect mills and factories at this point. It possesses all the advantages for supplying the manufactories, in almost every conceivable line of industry, with the raw material. The best and cheapest coal can be secured in unlimited quantities, and great unbroken forests supply all the varieties of timber for manufacturing and building purposes.

CONTINUED GROWTH AND PROSPERITY.

In 1854 one single house marked the starting point of this place. From that time the growth has been steady and gradual. In 1865 it was incorporated a city and then began the foundations of the thrift and enterprise now so conspicuously manifest to the stranger who has the good fortune to visit these mountain cities so full of progress and development. In 1880 the population was 3,400. In 1887 it numbers 7,500, with an annual increase strikingly characteristic of the places in this particular section of the South.

During the past year the following new improvements have been inaugurated:

| | |
|---|-------------|
| South Atlantic & Ohio Railroad | \$4,000,000 |
| Residences, storehouses, manufactories and public buildings | 425,000 |
| Buffum & Co. Planing Mills | 40,000 |
| Sparger Steel Co. | 100,000 |
| New hotel | 40,000 |
| Bristol Flouring Mills | 25,000 |
| Clinch River Veneering Factory | 25,000 |
| Bristol Milling Co. | 30,000 |
| Sullens Female College | 10,000 |
| Y. M. C. A. Building | 10,000 |
| Machine shop | 9,000 |
| Holston Packing Co. | 8,000 |
| Railroad offices | 8,000 |
| Broom factories | 5,000 |
| Bristol Steam Laundry | 3,000 |

Thus it will be seen that during the present year over four million and a-half dollars have been expended in the way of improvements in this Twin City, situated nearly 1,800 feet above the lowlands of the country. Judging from the constant inquiries pouring in from distant parts of the country it may be safely asserted that during the next year ready capital will continue to flow to this richly favored section of Tennessee and Virginia, where there are always to be found excellent chances for the investment of capital with sure and steady returns.

RESOURCES.

Lying in the center of the Tennessee Valley and between the coal fields of Southwest Virginia and the iron beds of upper Tennessee and Western North Carolina there is no reason why Bristol-Goodson should not become at once the great manufacturing center of this section of country. It is the center and market point of at least a circuit of 100 miles, and with the completion of the South Atlantic & Ohio Railroad no city in East Tennessee or Southwest Virginia will possess more advantages than this place, for the capitalist as well as for the home seeker. The lands in Southwest Virginia and East Tennessee encircling and tributary to Bristol-Goodson are among the richest in the State. It is a land dotted with smiling and prosperous villages and towns, blessed with fertile and arable soil it produces everything of use or comfort to man. The mountains and hills teem with minerals, while the climate is gentle and inviting.

Within a radius of 50 miles there is a large body of virgin forest, embracing almost every known variety of timber, but especially the workable kinds such as the oak, hickory, white pine, ash, poplar, linn or bass wood, with a large sprinkling of walnut and cherry.

There is probably no section in the entire South having more natural advantages than that lying contiguous to Bristol-Goodson. The advantages are many and varied, while the resources are abundant, inviting capital from all parts of the country.

The soil is rich and fertile, of limestone formation, adapted to the raising of every cereal known to man. The lands are particularly well adapted for stock raising as well as for truck of all kinds. It is the center of a country abounding in mineral wealth embracing all the ores utilized in the various manufacturing industries. There are 21 rivers in East Tennessee and 34 counties, through every one of which runs a navigable stream, innumerable creeks feed these rivers, and ever-flowing springs without number gush from the sides of the hills, ridges and mountains. These numberless springs, one of which is found on almost every farm, the lowlands contiguous to the creeks and streams, yielding large and never-

failing crops of grass, make this section of country unrivalled for stock raising and for dairy purposes. In Johnston, Carter and Unicoi counties, Tenn., the hematite ore is found in large quantities, while just across the line within a distance of 50 miles in Ashe county, N. C., are immense beds of magnetic ores free from all injurious substances. At Stock creek, a distance of 45 miles from Bristol, coke can be had in great abundance and of most excellent quality. At Big Stone Gap, an objective point of the South Atlantic & Ohio Railroad, is to be found the largest coking coal fields in the United States, many of the seams ranging from 12 to 14 feet in thickness.

With these natural advantages, coal on one side of the town and iron on the other there is no question regarding this place as a manufacturing center. Extensive preparations are now being made for large ovens for the purpose of coking, and as soon as they are firmly established and in working order Bristol will assume a very important position in the iron trade.

To-day this twin city in the mountains of East Tennessee is on a tidal wave of prosperity, and the question is often asked why and what are the causes leading to the future growth and development of this growing place. The causes may be recited as follows:

1st. It is in the center of a country abounding in mineral wealth, embracing all the ores utilized in the various manufacturing industries.

2d. The timber wealth is inexhaustible, embracing all the varieties of wood, and especially the better and more marketable kinds, such as oak, hickory, walnut, cherry, ash, sycamore or buttonwood, white oak and pine.

3d. The water-power presents a broad field for the profitable investment of capital. The many beautiful streams and shoals near the town are such elements of force that were they utilized they would drive all the machinery that could be erected in the neighborhood.

4th. The climate is healthful and mild. There is no better summer or winter resort than this place, the climate being of medium temperature, and the winters are free from protracted cold and snow. It is this fair, medium temperature that gives the highest average of health and development to men and animals, the greatest variety of agricultural productions, the most versatile and powerful natural aids to independent and enjoyable living.

5th. Not only is this a point for making cheap pig iron, but also a point that has great advantages for making iron in all its merchantable shapes, such as rails of steel and iron, car wheels, bar iron, castings, spikes and nails. There is as good, more abundant and cheaper material for coke here as at Pittsburgh and Connellsville. These are a few of the leading advantages of this place, while numerous others might be mentioned showing the superiority of this locality for the investment of capital and the building up of manufactures and industries.

IRON ORES.

In Sullivan county, known as the Holston valley, is the chief ore bed of this section, ranging in distance from seven to ten miles in a southeasterly direction from Bristol. Here are to be found numerous deposits of very valuable ores—red and brown hematites. The quality and quantity of these ores are well known. Many samples from the deposits in this section show the ores to carry from 56 to 65 per cent. of metallic iron, the average being over 60 per cent. This is rich enough for smelting anywhere within 250 miles of the mines at great profit. But it is not only in their abundance of metallic iron that these ores are exceptionally valuable; they are all first-class Bessemer (steel) ores. The percentage of phosphorus in the ore ranges from .021 to .029, so that here is to be found a very high grade of ore, now so much sought after by the steel men.

The State of Tennessee contains every variety of iron ore known to commercial use, except the spathic carbonate. The area of the magnetic ores and of the asoric hematites is not large, yet in the limited area where found the magnetic ore exists in large quantities. The mass of unaltered deposit ores, however, is beyond the possibility of any accurate computation, and the area in which they are contained comprises nearly three-fourths of the State. One of the most important ores, as respects quantity, in Tennessee is the carbonate of iron of the coal measures. This is, in England and Europe, one of the chief ores from which iron is made. It is used to some extent in Ohio and Pennsylvania, but as yet not at all in Tennessee, though it is one of the most abundant and easily worked ores.

There are points in the Tennessee coal field where it can be mined very cheaply. It is found in the State underlying the coal seam worked at Coal creek and at Careyville; at the latter it is specially abundant. There are a number of layers of it in the Tennessee coal field. The magnetic ore exists in a limited area, but is in large quantity and of excellent quality.

COAL.

On the Virginia side, within a radius of not a dozen miles, will be found a great abundance of coal, hence Bristol lies in the center of the coal and iron fields, where manufactures cannot help but spring up and increase from year to year, for the simple reason that all the natural advantages and resources are to be found here ready for the manufacturer at short notice and in abundant quantities. The coal mining advantages of Virginia arise from the great number of seams found accessible above water level, and from the fact that they contain coals of various compositions, adapted to all the requirements of trade and manufacture. The fat coking, gassy bituminous, the hard and valuable splint, and the rich and oily cannel in this highly favored region are found in great purity, and made easily accessible to the miner through the agency of running water, which has exposed the seams in thousands upon thousands of places, and in consequence of this and their size coal, as a general rule, can be mined cheaper and with more economy, under the same rates of labor, than in any other part of the Alleghany coal fields.

The South Atlantic & Ohio Railroad, at the distance of 70 miles from Bristol, enters the finest coal fields in North America, and from which the fuel, coal and coke, will be drawn to develop the vast—the almost inconceivable—iron ore deposits of Southwest Virginia, East Tennessee and Western North Carolina. A few extracts from the highest known authorities in the United States in respect of these coals may be properly introduced here. The late eminent geologist, Prof. Wm. B. Rogers, in his report on Virginia, says:

"That enormous area of nearly horizontal strata which we have designated as the fifth great geological division of Virginia * * * the large territory lying between the western limits of the State and an irregular line of mountain ranges nearly coinciding with the eastern front range of the Alleghany, the Greenbrier and the great Flat Top mountain. * * * No section holds out richer promise of valuable practical results. By far the greater portion, if not all, of its strata belong to a group of formations distinguished not only in America, but throughout the world as being the chief depositories of bituminous coal. * * * It is in these spreading strata of sandstone that nearly all the boundless treasures of this country are enclosed, and the continuous character exhibited by them give the strongest possible assurance of a like uninterrupted extension of the various beds of valuable materials which they include. In view of this how magnificent is the picture of the resources of this region?"

These views were uttered more than 45

years ago. It was not until 1880 that a specific examination was made of this great coal field in Wise county, Virginia, by scarcely a less eminent authority, Prof. J. J. Stevenson, of the University of New York, who to-day stands at the head of American geologists in his knowledge of the soft coal formations of the United States. In June, 1880, Prof. Stevenson was sent to Big Stone Gap in Wise county, Virginia, to report upon the coal formation there, which had been opened at many points for his examination by Gen. J. D. Imboden. He first spent a week there, returned North, and later came again and completed his work. He made two elaborate reports, one to the purchasers of the coal lands to the extent of more than 60,000 acres—the other upon the resources along the line of the (present) South Atlantic & Ohio Railroad. Of course we cannot give here his elaborate and exhaustive views, but must be content with a few extracts on leading points.

On page 16 of his report he says: "The available coal seams are four—the two splint beds, the 15 feet and the 8 feet bed. Eventually the cannel bed may become valuable, but at present it may be omitted. The splint beds lie well up in the series. * * * These beds yield a coal of very superior quality, as appears from the following analysis by Mr. A. S. McCreath, chemist to the geological survey of Pennsylvania. The sample was taken from the upper bed.

| | |
|-----------------|--------|
| Water | 0.089 |
| Volatile matter | 37.980 |
| Fixed carbon | 58.096 |
| Sulphur | 0.408 |
| Ash | 3.573 |

This coal is sufficiently pure to be used raw in the furnace, the percentage of ash and sulphur being unusually low.

A specimen was taken from the middle division of the 14 feet bed, which yielded the following by Mr. McCreath:

| | |
|-----------------|--------|
| Water | 1.510 |
| Volatile matter | 38.890 |
| Fixed carbon | 57.879 |
| Sulphur | 0.771 |
| Ash | 0.890 |

As a gas coal this can hardly be excelled.

The 8 foot seam being the most persistent and least variable of the whole series, and being likely to prove the most valuable as its coal yields an admirable coke, samples were taken from all the benches and directed that they be analyzed as one. The result, as obtained by Mr. McCreath, is as follows:

| | |
|-----------------|--------|
| Water | 1.980 |
| Volatile matter | 35.900 |
| Fixed carbon | 58.991 |
| Sulphur | 0.994 |
| Ash | 1.913 |

In reference to these coals Mr. McCreath says: "The above analyses speak for themselves and indicate coals of remarkable purity.

TIMBER RESOURCES.

Bristol is situated in and surrounded by inexhaustible forests of timber. There is an unbounded source of wealth in the vast forests of hardwood timber adjacent to this place. The growth of white pine not far distant from Bristol, extending for miles, rivals such forests in the Northern States as have supplied so long the large demands of the cities and towns there. Hemlock, cherry, poplar, the oaks, maple and chestnut, are of great size, and are abundant all through and down the slopes of the mountains. On the Virginia side is a great variety of forests. This body commences within 6 or 7 miles of Bristol-Goodson on the northern side of Walker's mountain and continues to the North fork of Holston river, from thence continuing down to Poor's valley and Clinch mountain. This valley has large quantities of white oak and yellow pine, chestnut and oak.

On the northwest side, next the Holston river, little if any cutting has been done; above the foot hills and on that side, there is much good timber standing high up, comprising the pines mentioned. Some white pine, large quantities of white oak, red and black oak, and chestnut, and in many of the hollows large and excellent

yellow poplar. This mountain will yield a large supply of the best of tan bark, chestnut, oak and hemlock, as these trees are very plentiful in many localities.

Southwest on Iron mountain, twin of the Holston, the trees are stunted and scrubby, except here and there in the hollows you find more large oaks and poplars, but generally the growth is undersize on the mountain, and will be chiefly valuable for the bark that may be gathered from it.

The White Top Mountain, just over the Virginia line, upwards of 5,000 feet high, throws off its spurs towards Taylorsville, and forms the end or abutment of the great Stone Mountain, dividing Tennessee and North Carolina for many miles. Here we are again in the home of the white pine, and it is the king of the timber trees here as in Shady, and a belt of it runs along Stone Mountain through Johnson, and here and there through Carter, all the way to Roan and Yellow Mountains.

There is a great deal of very valuable timber of all the varieties in Johnson on the east side of Roane Creek, up to the State line of North Carolina and Virginia. Doe Mountain has little but not much timber on it. In Carter county there is not now remaining much good timber land, except in its upper or southern half, next to North Carolina.

In the very broken and mountainous district, lying above Hampton, and between the Doe, Watauga and Elk, there is a block of over 100 square miles of nearly unbroken forest, mostly covered with the very best qualities of all the timber trees of this latitude. The walnut has been for some years so culled out of all this section of country that too little of it remains to be much of an object. But in the "walnut hills" district, a large quantity of this valuable wood will be cut when a future railway shall afford an outlet to it. The same is true of the cherry.

MANUFACTURING ADVANTAGES.

The advantages of Bristol for manufacturing interests are so eminently grand and prominent that it requires no extended notice to demonstrate their importance. They stand out boldly conspicuous. With the completion of the South Atlantic & Ohio road there is no city in the United States more favorably situated as regards accessibility to exhaustless coal and iron ore deposits than this city; and as a natural consequence no city presents more flattering inducements to the capitalist and manufacturer.

Following these great essentials comes cheapness and eligibility of sites for manufacturing establishments. In Bristol, locations for buildings, combining the requisites of space, water-power, transportation facilities, and the best of those advantages already mentioned for obtaining fuel, are to be had in every direction around the city and its suburbs at very low prices, and upon most reasonable terms. In the very heart of the city there is to be found water-power for those manufactories that can make use of it, and there are many now who utilize this motive power to a very considerable extent. It is not necessary to enlarge on its usefulness or the facilities derived from the natural advantages possessed by the city in this respect, for the reason that it has been clearly demonstrated by the practical experience of eminent engineers, who have carefully investigated the subject, that in any position where coal can be had "at ten cents per bushel," steam is as cheap as water-power at its lowest cost.

FACILITIES FOR IRON MANUFACTORIES.

Not only is this a point for making cheap pig iron, but also a point that has great advantages for manufacturing iron in all its merchantable shapes, such as rails, car wheels, bar iron, castings, spikes and nails. As already stated there is as good, more abundant and cheaper material for coke here than at Pittsburgh and Connellsville, and

all grades of pig iron, it is claimed, can be made at a cost of from 35 to 50 per cent. less than at Pittsburgh.

To give fair opportunities for the development of this region, to bring together and connect the iron and coal mines, a few short tram railways only are needed, (in some sections these are not needed), the iron and coal being contiguous; and in yet others the coal, iron and magnetic ores are superincumbent, as the writer was informed by one who is practically, and whose professional avocation or employment makes him familiar with the mineral resources and geological stratification of the earth, for a large section of country around Bristol. There is also need of some longer roads, connecting with the roads of Northern and Eastern Virginia, Tennessee, Kentucky and North Carolina, to facilitate the heavy intercourse that must rapidly spring into existence, when the teeming treasures of this region are brought out by capital and labor. Many eyes are turned in this direction, and it will not be long ere the richest mineral beds on the continent cease to be untouched.

RAILROAD FACILITIES.

Few places possess so many railway advantages as Bristol. Here is the line of the East Tennessee, Virginia & Georgia, passing through the very heart of city, traversing in its course a wealthy, fertile and beautiful section of country, noted not less for its varied and enchanting scenery than for the value of its agricultural and mineral products, and has opened up to commerce a vast area of country whose immense wealth in minerals, especially iron and coal, cereals, tobacco and cotton has added much to the prosperity of Bristol-Goodson. The Norfolk & Western terminates here, a very important link making important connections with the great trunk lines North and South. This road has connections with the great Richmond & Danville system at Point of Rocks, on the Tennessee on the North Carolina State line, opening up the shortest and best line from all points South to the interesting, attractive and healthy mountain regions of North Carolina. The South Atlantic & Ohio Railroad now being constructed from Bristol northwest through the counties of Washington, Scott, Lee, Wise and Dickenson, Virginia, to the Kentucky State line, where Russell Fork, of Sandy river, cuts the Cumberland range of mountains to its base, will be one of the most important factors in the growth and development of this place. The conception and plan of this railway link showed much forethought and ability, and the projectors will have the satisfaction of realizing the great benefits arising from its construction, where, at a distance of 70 miles from Bristol, it enters the finest coal fields in America, and from which the fuel, coal and coke will be drawn to develop the vast iron ore deposits of Southwest Virginia, East Tennessee and Western North Carolina.

Says Prof. M. F. Maury, in speaking of the resources along the line of the South Atlantic & Ohio Railroad:

PLASTER.

"A valuable fertilizer for all crops. A rough estimate of the deposit allows 200 feet thickness over an area of 1,000 to 1,700 acres, or 8,712,000 cubic feet per acre. The consumption in the United States is over 1,000,000 tons per annum.

DEMAND AND MARKETS FOR ORES AND COAL.

150 miles of ore and coal along the main line of railroad; 297 miles of ore belt tributary thereto. I have never seen or heard of a region in the United States where it is possible for one coal field to command so many miles of ore deposit without any possibility of competition.

LUMBER.

There are thousands of acres that will yield 15,000 and 20,000 feet per acre.

REASONS WHY RAILROAD DEVELOPMENT MAY BE EXPECTED.

Coal, coke, iron ore, lumber, timber, plaster,

and miscellaneous traffic. I know of no coal field and single line of railroad that can command so large an ore territory.

8 miles of forest on each side of 40 miles of this road will average 8,000 feet of lumber per acre, and will yield 3,276,800,000 feet of lumber."

PROSPECTIVE RAILROADS.

In the next twelve months Bristol-Goodson will be able to rejoice in the establishment of several "important links," by which she will continue to grow in material wealth and development.

The Tennessee Midland will be one of the most important, running via Nashville to Bristol, and opening up some of the most fertile and valuable lands in the State, together with some of the richest mineral and timber lands in the South.

The Richmond & Danville system will be extended from Patrick Courthouse, Va., to Bristol, which will give direct connection to the Mississippi river, with deep water outlet at Norfolk, Va. This route will be 63 miles nearer than the present lines now constructed. The Cincinnati, Chicago & Charleston will also be a very great advantage to this section of the State, inasmuch as it will be a great "feeder" to trunk lines running to the four quarters of the globe. This road is now in process of construction. Then the Bristol & Elizabethton Railroad, a local line running into the great Cranberry mines, will also very materially aid in the growth of Bristol-Goodson.

IMPROVEMENTS IN AND AROUND BRISTOL-GOODSON.

The public spirit manifested on every hand shows the firm desire on the part of the people of Bristol-Goodson to build up a city which will rank in importance with any throughout the entire South. The Bristol Land Improvement Co., of which Mr. A. D. Reynolds is president, is doing much to build up and beautify the place. This company is laying out handsome streets through their city property, which are to be 60 feet wide, shaded by elegant and stately shade trees. Their resident blocks, each containing 12 lots, are to be laid out by practical engineers and will be a great addition to the city. The city improvements in the way of new-paved streets, large and commodious alley-ways, and in the construction of proposed city water works, gas and electric lights, show this people to be up with the exigencies of the times. There are few cities in the State that show so much of pride, public spirit and pluck, and whenever questions of importance arise affecting the interests of the two places, every one pulls together for a common cause and a common benefit. The newspapers of Bristol are the levers by which much has been done to push the city ahead in material wealth and development. They leave no stone unturned by which good may be accomplished. There are three weekly newspapers published in Bristol: the Bristol Courier, News, and Reporter, and they are conducted with enterprise and ability. The "Bristol Courier," of which John Slack is editor and proprietor, has done much to bring Bristol-Goodson to the front. Mr. Slack has made the "Courier" the paper of the people. It is the tool of no party or clique, but is fearless and independent. Its motto is for the greatest development in the quickest possible time. The editorials are fearless and outspoken and the paper enjoys a well earned reputation.

The banking facilities of Bristol-Goodson are excellent, but yet there is room for more banks, which would pay, and pay handsomely. The National Bank of Bristol increased its capital stock some few months ago from \$50,000 to \$100,000, to meet the demands of trade.

In the way of churches, Bristol-Goodson has a record of which she may well be proud. There are nine white churches, including two Presbyterian, three Baptist, two Methodist, one Roman Catholic and one Episcopal.

LEADING INDUSTRIES.

The following industries established in the city are on a paying basis: a large box manufactory, brick manufactory, marble quarries, flour mills, cotton manufactory, planing mills, sash and door factory, lumber mills, woolen mills.

EDUCATIONAL FACILITIES.

There is no city in the South of its size and population that affords greater, and but few equal educational facilities to those of Bristol-Goodson. Besides the public schools there are three large seminaries or academies, and the intelligent and systematic system in which they are managed and controlled speaks well for this growing city.

NEEDS OF BRISTOL.

Any one of the following named industries would pay from their inception, especially so since the raw material is to be found at the very doors of the workshops: Rolling mills, foundries and machine shops, tanneries, lumber mills, chain manufactory, furniture manufactory, clothing manufactory, hub and spoke factory. Probably one of the greatest needs of Bristol-Goodson is skilled labor. Employment can be had at once for carpenters, brick masons and other mechanics. It is claimed that in no place in the South is there more room for skilled workmen and in no place are they more badly needed.

NOTES.

To the progressive and liberal spirit manifested by Dr. J. M. Bailey, general manager of the South Atlantic & Ohio Railroad, in the building up of Bristol-Goodson there is much due. Dr. Bailey is a born manager, a careful man of affairs, and possessed of most excellent judgment. His liberal policy in the management of the South Atlantic & Ohio Railroad has made him many friends in this section of the country, and wherever and whenever the doctor can be of service to the community he is always foremost with his good counsel, good judgment and money to push ahead all kinds of enterprises which look forward to the betterment of the condition of things all around. The fidelity and able manner in which he has pushed forward the South Atlantic & Ohio Railroad to completion is a monument to his executive ability, worth and standing as one of the progressive and liberal men of the South.

The tobacco interests are being largely developed—the bright tobaccos of this section rivaling the best North Carolina brights. A. D. Reynolds, now employing 350 hands, and working from 600,000 to 700,000 pounds of tobacco yearly, obtains most of the cream of this industry.

To Dr. J. M. Bailey, Genl. J. D. Imboden, W. A. Spager, A. D. Reynolds, Capt. J. H. Woods, Saml. L. King and Ben. L. Dulaney is the MANUFACTURERS' RECORD indebted for many courtesies. These gentlemen are all workers in the development of their city. They are progressive, full of practical ideas and information, and are ever ready to inaugurate any scheme by which they can push their own section to the front.

Bristol-Goodson has a bright future. The attention of the capitalist and home-seeker must be drawn this way. The advantages, resources, possibilities and inducements are manifold. It is a question who will be among the first to take advantage of all the benefits spread around by a lavish hand, now awaiting the influx of capital, the prospective settler and the skilled laborer.

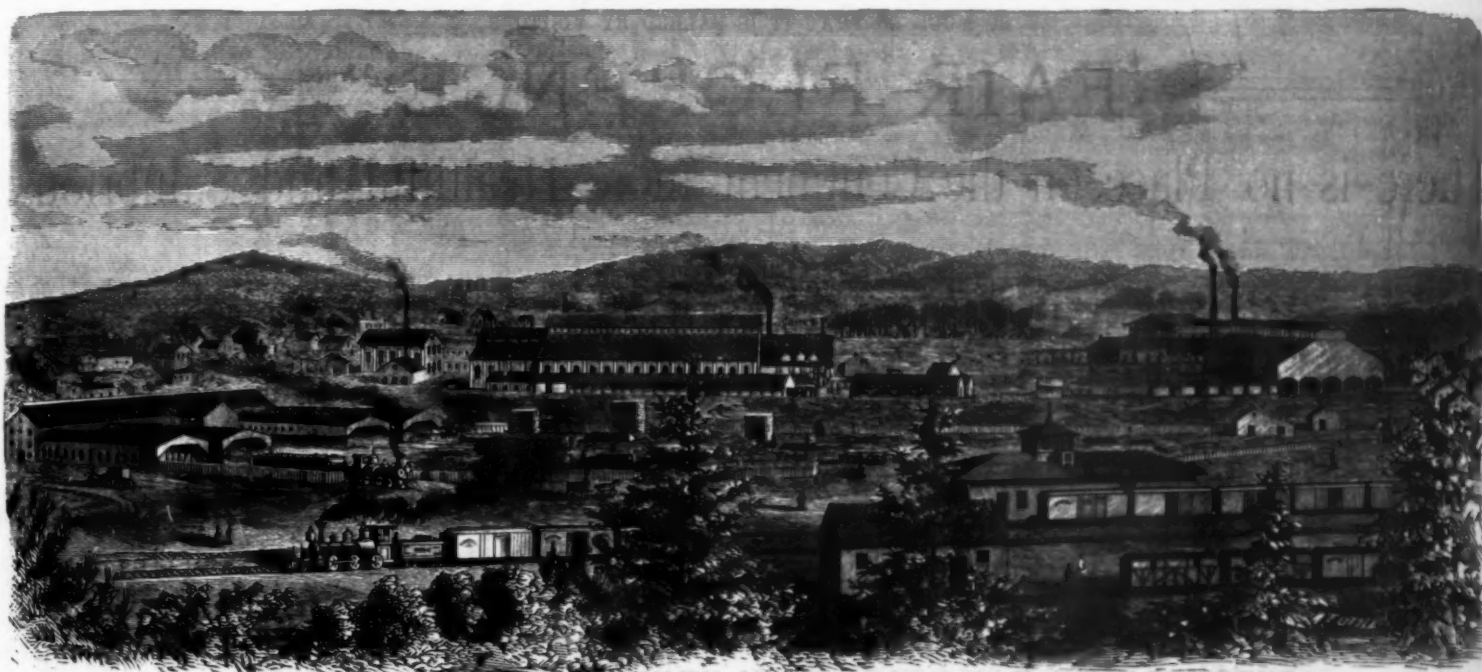
HINTON A. HELPER.

MANAGERS of mills, factories, furnaces, mines, etc., and parties starting manufacturing enterprises, and needing machinery or supplies of any kind, will find it profitable to consult the advertising columns of the MANUFACTURERS' RECORD. Its pages contain names of the best houses in the country among manufacturers of and dealers in machinery and mill supplies.

ANNISTON, ALA.

"The Model City of the South."

THERE is no healthier or more charming place of residence in America than Anniston; built on the slope of one of the highest of the chain of the Blue Ridge in Alabama, it commands scenery that is unapproachable in the State. Nature could not have formed a more beautiful place for man to build a city or given greater natural advantages. The natural drainage is most thorough and complete, while in addition the city is preparing a system of underground sewerage. *A more delightful and invigorating climate cannot be found anywhere:* mild in winter, cool in summer, a thousand feet above the Gulf, with the high and broken chain, range after range in the east, Blue Mountain in the north, Coldwater Mountain in the southwest, make Anniston the *coolest, healthiest and most attractive of any city in the South.* It has the richest agricultural country surrounding and tributary to it in the State, to support a manufacturing and mercantile population. The mountain sides will grow the grape and every kind of large and small fruit to perfection, and the valleys every product of diversified farming. *It is in the heart of the richest mineral district of the South,* and commands the great fields of brown hematite ores on which the great and successful manufacture of iron must in the end depend for quality and profit in every branch of most skillful and best manufactures of iron and steel. It has tributary to it *the best and most extensive pine forests in North Alabama,* that are reached by roads owned and controlled by Anniston citizens, while it has secured to its industries the very best coal mines and coking coal in Alabama. There is no city in America, in proportion to population, that has the manufactures of Anniston, or employs as many working men, or does a larger mercantile business. The industries already in full and profitable operation in Anniston are the **two Woodstock Furnaces** producing six hundred tons of Standard Car Wheel and Malleable Iron per week, and the **two Clifton Furnaces**, tributary to Anniston, producing nearly as much more. **The Car Works** are fully employed turning out forty cars per week, and are introducing new machinery and larger engines to increase their capacity to twenty cars per day. **The Rolling Mill and Car Wheel Foundry and Steam Forge** are among the largest in the South, of a capacity of two hundred wheels, a consumption of 120,000 pounds of metal per day, exclusive of the Rolling Mill and Steam Forge. These works are being enlarged to meet the increasing demands upon them. **The Cotton Factory** is one of the largest in the South, containing 11,700 spindles, and is running to its full capacity, while the foundry of **Murray & Stevenson**, and machine shop of **Pindar & Co.**, and planing mills of **Miller & Smith and Farrar & Co.** employ a large number of men and are crowded with work. The new industries that are now under way and provided for will within the next twelve months **Add Four Thousand Additional Working Men to Anniston's Population.** Two of the **Largest Iron Furnaces in the South**, capable of producing two thousand tons of iron per week, are progressing rapidly, and one of the **Largest and most complete Pipe Foundries in the world** for the production of Gas and Water Pipe is under construction,—it will employ nine hundred men.



CAR WORKS, ROLLING MILL AND BLAST FURNACES—ANNISTON.

The Steel Bloomery, for the production of Steel Blooms, is nearly completed, and the **Fire-Brick Works of Taylor & Sons** are ready for operation. **The Ninety-Inch Morse Cotton Compress**, with its warehouses, will be ready to receive the coming crop. Forty thousand bales, it is estimated, will be secured to Anniston from the territory that its system of railroads have opened up. The completion of the **Anniston & Cincinnati Railroad** during the present year, that will be owned and controlled by Anniston's citizens, opens up new territory and forms a **New and Shorter Grand Trunk Line to Cincinnati and the great Northwest, and to the Southwest via New Orleans and Shreveport.**

It is only the profits of business and labor that can add to the wealth of a community, add to or maintain the value of real estate, and add to the prosperity of its people. Having this in view, every industry and business in Anniston is established on a *profitable basis.* All its merchants are doing a large and profitable business, far larger than they prepared for or anticipated; it is the same with the manufacturers, while *not a dollar of debt has been created*, either by issue of a bond or placing of a mortgage on any of its old or new industries, leaving their earnings free from fixed charges that must be paid in times of depression as well as of prosperity. *To the investor, either in business, manufacturing or real estate,* nowhere else are presented opportunities as safe, secure and certain as at Anniston, or where they can rest on as healthy and solid foundation. It has trunk line railroad communication with all parts of the United States, and freight rates with the most favored of Southern cities. Two lines of railroads are owned and controlled in the interest of Anniston by its own citizens. *It has the best system of Water Works*, with the purest well water from three hundred feet below the surface, drawn from white quartz sand and gravel, and distributed through the city, with a pressure of 100 pounds to the inch, from a reservoir always full, protecting the city against fire and giving it the lowest rate of insurance. *The city is practically free from debt, and taxation limited to one-half of one per cent.* *The means for education are the very best.* Public Schools of a high grade are provided. One of the finest and best institutes for Young Ladies has been opened, and a College for Boys and Young Men, to which a School of Technology and Chemical Assay Laboratory have been added, is now nearly completed, and the best of teachers and professors secured for both. There are *Churches for all denominations*, and *Hotel Accommodations that are not surpassed in Europe or America.* **The ANNISTON INN** provides the quiet and comfort of the most luxurious home. *The streets are wide, macadamized, and rolled hard and smooth for pleasant drives.* **STREET CARS AND DUMMY LINES** are being built to different parts of the city, and the **ELECTRIC LIGHT** service enlarged and improved, leaving nothing undone to promote the comfort of its citizens and maintain and increase the value of their property and profits of their business.

The Anniston City Land Company, or the Bureau of Information, will give any information desired when applied to, and invite all wishing a charming place in which to live, to do business or to make profitable investments, to visit

—ANNISTON.—

Florence, Ala.

County Seat of Lauderdale County.

At Head of Navigation on Tennessee River, and at Foot of Muscle Shoals Canal,
which will be open Jan. 1st, 1888.

SITUATED on a gently undulating Plateau, 200 feet above high-water mark, surrounded by three large creeks of pure free-stone water. It has a Court House, Two Colleges, Four Public Schools, Six Churches, beautiful wide streets, graded and graveled, and shaded with forest trees; Hotels, fine store houses, Masonic, Odd Fellows, K. of H. and L. of H. lodges. A population of 2,500—moral, social and hospitable.

— The Scenery on Every Side is Picturesque and Beautiful. —

SO MUCH SO THAT IT IS CALLED BY VISITORS

— 'FAIR FLORENCE.' —

There is no Place on the Continent more Healthful and Salubrious.

MANUFACTURES.

Within the last six months numerous manufactures have been located here, among the number:

Five Large Blast Furnaces.
One Rolling Mill,
Three Planing Mills,

One Saw Mill,
One Flour Mill,
One Wooden-Ware Factory.

One Cotton Mill,
One Cotton Compress and Ice
Factory.

Two Brick Machines and
Three Hand-Brick Yards.

There are VAST BEDS OF IRON ORE within a few miles North and
IMMENSE COAL FIELDS SOUTH

ACCESSIBLE BY RAILROADS NOW BEING RAPIDLY CONSTRUCTED.

By the 1st of January the Nashville & Florence Railroad will be completed, making three lines of railroad, and the river, thus opening up **VAST AREAS OF TIMBER, IRON ORE, COAL, Marble, Limestone, Kaolin, Fire-Clay,** and almost every kind of mineral and product.

THE LANDS IN THE SURROUNDING COUNTRY ARE FERTILE AND PRODUCTIVE.

All kinds of Grain, Grasses and Fruits grow to perfection. Springs and Water Courses are numerous, and grazing for Cattle is abundant for eight months of the year.

Pamphlets and maps furnished on application to

Florence Land, Mining & Manufacturing Company.

GADSDEN, ALA.

✱ *Reasons Why Capitalists and Manufacturers* ✱

SHOULD MAKE GADSDEN THE FIELD OF THEIR OPERATIONS.

GADSDEN is situated in the midst of the RICHEST MINERAL SECTION OF ALABAMA; is on the West bank of the Coosa River. This stream furnishes Cheap Transportation to the Coal Fields and Iron Veins and Beds that are found all along its banks.

The Sand Mountain, Lookout and Coosa Coal Fields are at our very doors. *This Coal Cokes equal to any Coal in the South.*

The immense forests that cover the mountain and plains, and all along the Coosa and along the five railroads running to Gadsden, will for ages furnish as **CHEAP CHARCOAL AS CAN BE HAD ANYWHERE ON THE CONTINENT.** Limestone is found all around the city,—so Gadsden has in as great abundance, and at small cost, all descriptions of

➤ **Rich Iron Ores, Fine Coking Coals, best class Charcoal, and Limestone for the quarrying.** ◀

And, as an Iron center, no place in the favored State of Alabama can compare with Gadsden, when we consider our Ore and Fuel supply, our abundant Water, our unequaled Climate, **UNINTERRUPTED HEALTH and FINE TRANSPORTATION FACILITIES.** We have the most **INVITING FIELD** to all seeking locations, either for manufacturing iron in any of its varieties, or for investment in any other industries. Gadsden has to-day in successful operation the

LARGEST CHARCOAL FURNACE IN THE STATE,

Has **Four Large Saw Mills**, with annual output of twenty million feet of the finest long-leaf Yellow Pine Lumber, three large Planing Mills, one Foundry and Machine Shop, two Gin and Flouring Mills, large Furniture, Sash and Door Factory, two Metallic Paint Mills, Ice Factory, a splendid system of Water Works, 80 pounds pressure, large steam Brick Works, and in course of construction a 100-ton Coke Furnace, being built by the Gadsden, Alabama, Furnace Co.; has stock subscribed for an additional Charcoal Furnace, has a National Bank, Cotton Compress, large Cotton Warehouse, handling 15,000 bales cotton, and a magnificent agricultural country all around us.

➤ **The Gadsden Land and Improvement Company** ◀
OWNS 3,000 LOTS,

And invites capitalists and manufacturers to come to Gadsden and see its advantages, pledging themselves to donate to any manufactory locating here, and working twenty-five men or more, **GROUND UPON WHICH TO LOCATE PLANT**, accessible to railroad or river. *Our Railroads afford transportation facilities equal to any point in the South.*

The Rome & Decatur gives close connections with the East Tennessee, Virginia & Georgia and Louisville & Nashville systems, the Anniston & Cincinnati with East Tennessee, Virginia & Georgia and Richmond & Danville, also the Alabama Great Southern Railroad; the Tennessee & Coosa Railroad with Alabama Great Southern, also the Tennessee River at Gunter'sville and the Central Railroad, when built, from Casselton to Decatur, making us on the short line from Kansas City and the West to Atlanta and the South Atlantic Coast.

Lots are Sold on the Most Favorable Terms:

One-third CASH, balance in one and two years.

We have a population of over 4,000, good Schools, and Churches of all denominations; splendid system of Electric Lights, Telephone Communication over the city, also to Rome, Ga. Boats run regularly the year round on the Coosa, carrying U. S. mail and freights from this point to Rome, Ga., a distance by water of 154 miles.

FOR FURTHER PARTICULARS, ADDRESS SECRETARY OF

The Gadsden Land and Improvement Co., ✧ **Gadsden, Ala.**

Tuskaloosa, Ala.

— * ALABAMA'S NATURAL PITTSBURGH. * —

A Railroad and River Town of 6,000 Inhabitants, in the Coal, Iron and Timber District.

Healthful Location. Salubrious Climate. School Facilities Unequaled by any other town in the South.

"EXAMINE THE MAP."

+ SITUATED ON +
Queen & Crescent
— TRUNK LINE, —

IN THE
Warrior Coal Field

AND ON THE
WARRIOR RIVER.

Only Navigable River touching the
Alabama Mineral Field.

Eight Months Navigation. Being Surveyed
now to be opened all the year round.
All Water Navigation to

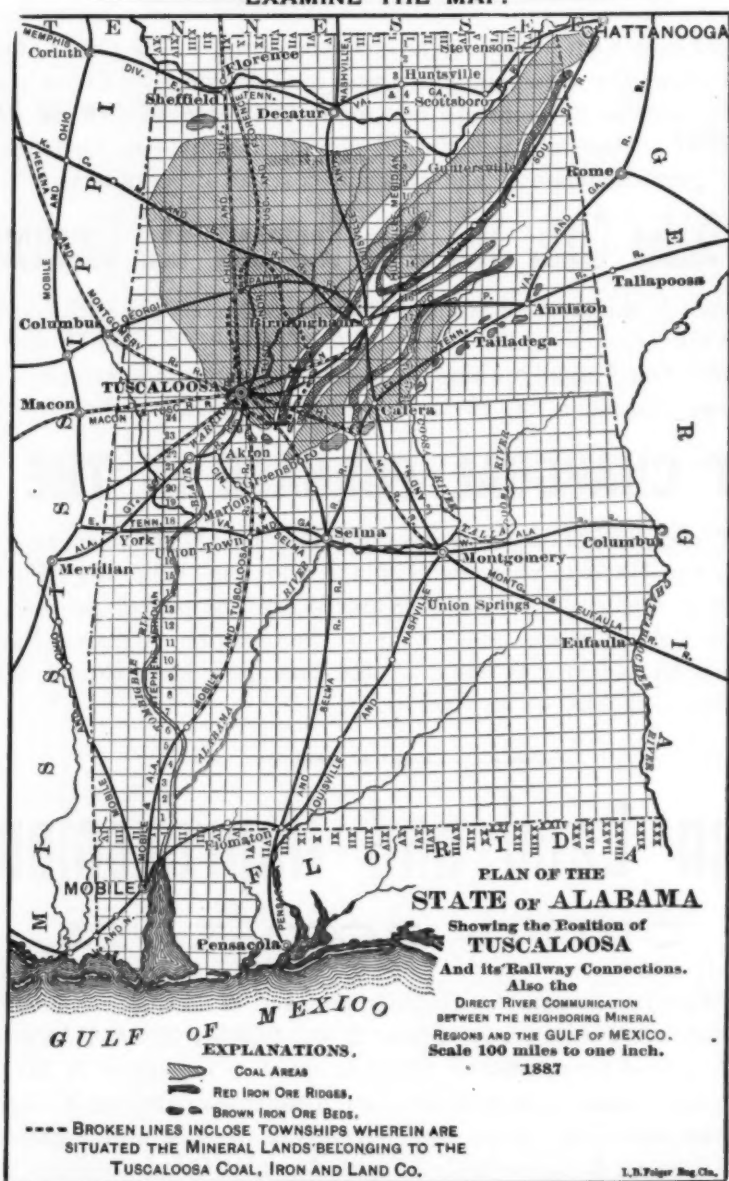
❖ **MOBILE** ❖
AND THE

Entire Gulf and Atlantic Coasts.

— THE —
Tuskaloosa Northern Railroad
Is now under construction into the
MINERAL and TIMBER FIELDS.

— THE —
Macon & Tuskaloosa Railroad
Will soon be building into the
COTTON REGION OF MISSISSIPPI.

Fine Farming Region
Around and Below the City.



Superior Inducements
AND

+ ADVANTAGES +
TO ALL

Manufactories Consuming
WOOD,
IRON,
COTTON.

FINE COOKING COAL
In workable veins near city, fully tested.

◁ The Fire Clay ▷
Existing in inexhaustible quantities, has been
practically tested and pronounced
The Best yet Discovered in the South.

Street Car and Dummy Lines
NOW BUILDING.

◁ Water Works and Electric Lights ▷
TO BE PUT IN AT ONCE.

COTTON MILL
In Successful Operation.

ALSO
LARGE BRICK WORKS
COTTON-SEED OIL MILL, &c.

Manufacturers Seeking Locations in the South have here

THE GOLDEN OPPORTUNITY.

Many have availed themselves of it, but such is the wonderful richness of the resources of this section that there is

— ROOM FOR ALL —

THE **Tuskaloosa Coal, Iron & Land Co.,**

Owning 4,600 acres of city and suburban property, and 40,000 acres of mineral and timber lands, offers liberal inducements to manufacturers
to locate at Tuskaloosa, Nature's City, and invites correspondence and the fullest investigation of its claims. Address

W. C. JEMISON, President Tuskaloosa Coal, Iron & Land Co., **TUSKALOOSA, ALA.**

CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

ALABAMA.

Alabama.—It is stated that a syndicate, consisting of Senator Sawyer, of Wisconsin, and others are purchasing largely of timber lands, and will build a number of saw mills in the near future.

Amory.—The Kansas City, Memphis & Birmingham Railroad Co. are preparing to build a round-house, shop, etc.

Anniston.—Taylor & Son will erect a dry house, 100x150 feet, at their fire brick works near Anniston.

Anniston.—It is stated that a cracker factory will be started. The Anniston City Land Co. can give information.

Anniston.—John Noble has purchased a site for the hospital previously reported to be erected.

Anniston.—Jewell & Son have the contract for the stone work of the Anniston Pipe Works, previously reported.

Anniston.—A site has been purchased for the Episcopal church previously reported to be erected. It will cost probably \$40,000. John Noble can give information.

Anniston.—Work has been commenced on the union depot previously reported to be built by the Anniston City Land Co. at a cost of \$30,000. The main passenger building will be 42x150 feet.

Anniston.—It is again rumored, but not confirmed, that contracts have been finally closed for the establishment of the \$1,500,000 car and locomotive works in connection with the Alabama Car Co. and Noble Bros. Car Wheel Works, previously mentioned.

Atalla.—The Atalla Iron & Steel Co. will begin work on their furnace November 1.

Atalla.—J. W. Penn is trying to organize a company to manufacture axe and broom handles, chairs, etc., and wants the address of manufacturers of machinery needed for such purposes.

Atalla.—It is stated that plans have been prepared for a new hotel. If true, the Atalla Land Co. can probably give particulars.

Atalla.—Arrangements have been made, it is said, to build the union depot, previously reported to be erected by the Anniston & Cincinnati and other railroad companies.

Auburn.—There is talk of a dummy railroad being built.

Bedsole.—D. J. Bedsole will rebuild his mill and gin lately reported as burned.

Bessemer.—There is talk of building a street railroad.

Birmingham.—Parties from Trenton, N. J., representing the Potters' Union, will investigate the kaolin deposits of North Alabama, with a view to establishing large pottery works if the results are satisfactory.

Birmingham.—The Presbyterians will build a church at Smithfield. Rev. P. C. Morton can give information.

Birmingham.—The Baxter Stove & Manufacturing Co. have let the contract for 25 cottages.

Birmingham.—W. H. Graves, of Montgomery, has contracted for the erection of a large three-story brick building.

Birmingham.—A three-story frame hotel, 42x150 feet, will be built by the Louisville & Nashville Railroad Co.

Birmingham.—The Union Gas, Oil & Asphalt Co., reported last week as chartered, own land in Lawrence, Morgan and Winston counties, and will bore for oil at once.

Birmingham.—The Gate City Lumber & Improvement Co., capital stock \$30,000, has been organized. R. H. Brannon, reported last week as building a large planing mill, is interested in the company.

Birmingham.—The Sloss Iron & Steel Co. are erecting a water-gas machine to light their chemical laboratory and offices, and contemplate lighting their entire furnace plant with water gas.

Birmingham.—The Birmingham Bridge Co. have reorganized as the Birmingham Bridge & Bolt Co., with a capital stock of \$100,000. W. P. Kearney is president, and C. W. Wood, secretary and treasurer. The company will triple the present capacity of their plant.

Birmingham.—It is rumored that a large manufacturing plant will be moved from a New England State to Birmingham.

Birmingham.—A pin and link factory is reported as being erected.

Birmingham.—The union depot is to be enlarged.

Blountsville.—It is reported that the Blountsville Land Co. has lately been organized. T. N. Hudson can give information, if correct.

Brewton.—The corporation of Blacksher Bros. & Miller, manufacturers of lumber, will hold a meeting October 20 to consider increasing their capital stock.

Calera.—A school and jail are contemplated.

Clayton.—Wright & Strother, of Birmingham, have been awarded the contract to extend the Georgia Central Railroad from Clayton to Ozark, 40 miles.

Carbon Hill (Marion County).—Friel & Moore are developing a coal mine at Horse creek.

Decatur.—A company has been formed, with a capital stock \$30,000, to build an opera house. R. P. Baker can give particulars.

Decatur.—W. H. Woldridge, of Birmingham, and others have formed a \$100,000 stock company to establish chain and architectural iron works. A site has been selected, and work will soon be commenced.

Decatur.—The Decatur Land, Improvement & Furnace Co. has arranged for the building of a theatre to cost about \$100,000. L. B. Wheeler will prepare plans.

Decatur.—The Gateway Land Co. is being organized by Messrs. Flynn, Robinson, Park, Lee, Thomas and others.

Decatur.—A building and loan company is being formed to aid in the building of a large number of houses.

Demopolis.—Bryant Whitfield has erected a ginnyery.

Florence.—The capital stock of the North Alabama Furnace, Foundry & Land Co., reported last week as to build three furnaces, is \$1,000,000. The capacity of each furnace will be 150 tons. J. S. Lawton, Atlanta, Ga., is president of the company, and J. H. Field, Columbus, Miss., general manager.

Gadsden.—The Anniston & Cincinnati Railroad Co. have purchased a site, 125x250 feet, on which to build a depot.

Hanceville.—J. J. Kleibacher has formed a \$40,000 stock company to erect a chair factory.

Huntsville.—James D. Rice and H. S. Sims will build a telephone line ten miles long.

Huntsville.—The Monte Sano Hotel will be enlarged.

Isbell.—T. L. Fossick & Co. will probably extend their branch railroad two or three miles.

Jacksonville.—A cotton gin, a mill and wool-carding machinery have been erected by W. J. Adesholt.

Jasper.—It is reported that a company has been formed to build a hotel.

Leeds.—It is reported that Ohio parties will erect an iron foundry. If true, the Leeds Land & Manufacturing Co. can give particulars.

Leeds.—It is stated that Northern parties will erect a steel nail factory as soon as it is demonstrated that steel can be made at Leeds either by the Henderson or Bessemer process. The Leeds Land & Manufacturing Co. can probably give information when anything is done.

Montgomery.—A stock company will soon be organized to erect works to manufacture artificial stone under the Pierce patent.

Rock Mills.—The Wehadkee Manufacturing Co. have, it is stated, bought some new machinery for their cotton mill.

Selma.—O. D. Crocker, of New York, contemplates contracting to build the Selma & Cahaba Valley Railroad.

Sheffield.—The capital stock of the East Sheffield & Tuscumbia Water Co., reported last week, is \$50,000.

Sheffield.—Richmond (Va.) parties are negotiating for the establishment of an agricultural implement and gin factory. The Sheffield Land, Iron & Coal Co. can give information.

Sheffield.—T. H. Grace will erect the flour and grist mill reported last week; also will erect a machine shop.

Sheffield.—The Sheffield Hotel Co. are preparing to commence work on their brick and stone hotel, previously reported.

Sheffield.—The Sheffield & Birmingham Coal, Iron & Railroad Co. and other railroad companies have under consideration the building of a union depot.

Talladega.—Arthur Bingham will erect a three-story brick building, 22x120 feet.

Talladega.—The Talladega Land & Improvement Co. will erect a large brick building.

Talladega.—The Talladega Iron Co. has been chartered with a capital stock of \$150,000. May build a furnace.

Talladega.—J. M. Sullivan, of Birmingham, has purchased some new machinery for his Story-Cunningham gold mine. He is negotiating for the Riddle gold mine, and will erect machinery to fully develop it if the sale is consummated.

Tuskaloosa.—The building committee of the University of Alabama have let the contract for erecting the chemical laboratory, lately reported, to F. Hubbell & Co. It will be 75x110 feet. The Union Iron Works Co., of Chattanooga, Tenn., have the contract for a system of water works.

Tuskaloosa.—The contract to furnish the machinery for the steam laundry for the University of Alabama has been let to the A. M. Dolph Co., of Cincinnati, O., at \$2,500.

Tuskaloosa.—It is reported that a dummy railroad will be built. If true, the Tuskaloosa Coal, Iron & Land Co. can give information.

Whistler.—The Mobile & Ohio Railroad Co. have converted their round-house into a wood-working establishment.

ARKANSAS.

Arkadelphia.—The Royston Cotton Mill has been purchased by parties who will move it to Arkadelphia.

Bentonville.—The Arkansas Tobacco Co., capital stock \$10,000, has been chartered to deal in and manufacture cigars and tobacco. W. B. Deming is president.

Black Rock.—L. Maxfield, of Helena, will start the machine shop reported last week. He has secured a site.

Corning.—A lumber mill will probably be erected.

Greenway.—W. P. Carter has received the contract to build a levee on the Arkansas side of the St. Francis river.

Helena.—\$50,000 has been subscribed to build a levee. Major Kloster can give information.

Little Rock.—D. H. Thomas contemplates building a new cotton press factory either at Little Rock or Memphis, Tenn.

Mountain Home.—The Baxter County Mining Association has been formed.

Pine Bluff.—The gas works, reported last week as being enlarged, are being replaced with new works by the Southwestern Light & Improvement Co. They will also replace a large number of gas mains. The erection of an electric light plant is contemplated.

St. Francis.—C. D. Juenall will remove his saw mill to another location.

Texarkana.—A wagon factory is reported to be established.

Texarkana.—There is talk of purchasing the old Arkansas Oil Mill and converting it into a cotton and woolen mill.

FLORIDA.

Apalachicola.—D. M. Munro & Co. will add a planing mill to their saw mill.

Apalachicola.—The Columbus & Gulf Navigation Co. have leased sites to build warehouses.

Bloomfield.—John F. Omweg has started a cigar factory.

Bonifay.—The Bonifay Manufacturing Co. contemplate moving their factory to West Bonifay.

Eustis.—It is reported that work on a large hotel will soon be commenced. Charles B. Hill can give information.

Fernandina.—It is reported that the Loomis Manufacturing Co. will increase the capacity of their fibre factory.

Gainesville.—A canning factory is being agitated. If anything is done O. J. Farmer can probably give information.

Lake City.—Noyes S. Collins & Co. will build water works.

Orlando.—C. E. Pierce has commenced work on his contract to erect a two-story building, 30x90 feet, for G. R. Rogers. It will cost \$10,000.

Palatka.—The Georgia Southern & Florida Railroad Co. will make Palatka the terminus of their railroad if they receive a subscription of \$25,000.

Pensacola.—Moreno & Werling have started a bone mill.

Pine Barren.—The McMillan Mill Co. are building a railroad to a new mill.

Sanford.—The South Florida Exhibition Association, reported last week as to erect buildings, will receive bids for their construction.

Sanford.—Frederick Hotchkiss will erect a block of brick buildings.

Starke.—Parties have been prospecting with a view to building a saw mill near Starke. If anything is done Webb & Moore can probably give information.

Trabue.—A hotel will probably be erected. Col. Trabue can give information.

GEORGIA.

Americus.—H. C. Bagley will rebuild on a larger scale his grist mill and gin, reported last week as burned.

Americus.—E. Littleton and Thomas Graham will start an axe handle factory.

Atlanta.—The bills previously reported as introduced in the legislature to incorporate the Atlantic, Birmingham & Great Western Railway Co., the Louisville, Waynesboro & Alexander Railroad Co., the Cartersville, Marysville & Knoxville Railroad Co., and the Thomasville, Florida & Western Railroad Co., and to allow the Atlanta & West End Street Railroad Co. to extend their railroad, have become laws.

Atlanta.—The technological commission have rejected all bids for erecting the machine shop lately reported, and will probably advertise for new bids.

Atlanta.—A bill has been introduced in the legislature to incorporate the Augusta & White Plains Railroad Co.

Atlanta.—W. C. Rawson, C. E. Boynton and E. E. Rawson have chartered the Gate City Coffin Co., capital stock \$100,000, to manufacture coffins, undertakers' supplies, &c.

Augusta.—The contract to build the Masonic temple, previously reported, has been let to T. O. Brown, at \$29,046. \$5,000 extra will be used for putting in water and gas pipes and an elevator.

Augusta.—A steam laundry is being established by J. J. Verd.

Barnesville.—An ice factory is projected. The Barnesville Manufacturers' Improvement Association can give particulars.

Brunswick.—The Brunswick & Western Railroad Co. will build two cotton sheds, each 50x150 feet.

Conyers.—The object of the land and improvement company referred to last week will be, if formed, to develop granite quarries, build a railroad to the quarries, &c. J. A. B. Stewart is interested.

Cumming.—A stock company will be formed to build a college. Professor Gordon can give information.

Macon.—A contract to build the Atlantic, Birmingham & Kansas City Railroad, including erection of all depots, &c., has been made with E. C. Machen, of New York. Work will be commenced soon.

Logansville.—G. W. Swords, whose whiskey distillery was reported last week as burned, will rebuild.

Marietta.—Proctor Lawrence has made a proposition to build water works.

Milledgeville.—W. T. Conn & Co. will start the manufacturing of candies.

Montezuma.—I. J. Sanders will rebuild his ginney, lately reported as burned.

Ophir.—There is talk of forming a stock company to develop one of the mines owned by the Franklin & McDonald Mining Co., and to erect a large stamp mill.

Rockmart.—The formation of a land and improvement company is being agitated.

Rome.—The gauge of the Rome & Carrollton Railroad, from Rome to Cedartown, will shortly be changed to the standard.

Savannah.—The Savannah Cold Storage & Ice Manufacturing Co. is being organized.

Spring Bluff (P. O. Tarborough).—Fleming & Cay are moving their saw mill from Bull Head Bluff to a point 2½ miles from Spring Bluff. They have bought 2,000 acres of timber land.

Tallulah Falls.—W. D. Young has decided not to start the manufacturing of furniture

as contemplated, but will develop a gold mine.

Valdosta.—A cigar factory is reported to be started. C. R. Pendleton can probably give information.

Waycross.—T. M. Dexter, of Brunswick, has contracted to sink an artesian well.

West Point.—A railroad is to be built from West Point to the West Point Mills, (cotton.) W. C. Lanier can probably give information.

West Point.—The Alabama & Georgia Manufacturing Co. have purchased some new machinery for their cotton mill.

KENTUCKY.

Covington.—Efforts are being made to secure the erection of a fine hotel. If anything is done the secretary Chamber of Commerce can give information.

Frankfort.—It is proposed to organize a \$30,000 stock company to establish a tobacco factory. If anything is done George A. Lewis can probably give information.

Georgetown.—Scott county has voted a \$100,000 subscription to the Paris, Frankfort & Georgetown Railroad.

Lexington.—A \$20,000 stock company has been incorporated to build a flour mill.

Louisville.—F. Leib & Sons have purchased the pork packing establishment of Hamilton Bros. and enlarged it. They will, it is said, erect a house for summer packing.

Louisville.—S. J. Hobbs will erect four brick buildings corner 13th and Delaware streets to cost \$8,000.

Louisville.—The Long & Bro. Manufacturing Co., chair manufacturers, will increase the capacity of their factory.

Louisville.—A company will be formed to extensively develop cement rock quarries and erect a cement mill.

Louisville.—The Gayner Electric Co., capital stock \$200,000, has been organized to manufacture fire-alarm and police-telegraph apparatus, and sell electrical machinery and supplies. John H. Sutcliffe is president; John J. Banel, vice-president, and F. F. Gainer, superintendent and electrician.

Louisville.—A. Button & Sons will at once establish stock-yards at East Louisville.

Louisville.—It is stated that one or more manufactories will be erected on the property of the West Louisville Land & Improvement Co. Others are being negotiated for, it is said.

Maysville.—Charles Weiland, of Cincinnati, Ohio, contemplates erecting a large brewery, and has been looking for a site.

McGregor.—A 6,000 school building is to be erected soon. S. Amsler can probably give information.

Owensboro.—A. C. Tompkins is president; Lefe Green, of Falls of Rough, vice-president; George V. Triplett, secretary, and James H. Parrish, treasurer, of the Owensboro, Falls of Rough & Green River Railroad Co., reported last week as organized. Preliminary surveys will be made at once. The road will be about 35 miles long.

Newport.—Joseph A. Scarlet will erect a row of 2½-story brick buildings at a cost of \$48,000.

Scottsville.—The Elizabeth, Lexington & Big Sandy Railroad Co., John Echols, Lexington, vice-president, contemplate building to Scottsville.

Smithland.—The name of the land and improvement company reported last week as organized with David Adams as president, is the Livingston County Mineral, Land & Improvement Co. It is said that the company propose to build a railroad to Paducah, 12 miles.

Winchester.—Garvey Bros., Lee & Kenefick have contracted to build the Louisville, Cincinnati & Virginia Railroad, previously reported, from Winchester to Beattyville. They will begin work at once.

Winchester.—Stuart & Co., previously reported as receiving a franchise to build street railroad, contemplate building a dummy railroad, and want bids on rails, engines and motors.

LOUISIANA.

New Iberia.—James Freret, of New Orleans, has the contract to build a Catholic church to cost from \$25,000 to \$30,000, and will soon begin work.

Shreveport.—Mr. Gleaves, of Paducah, Ky., contemplates starting a furniture factory.

MARYLAND.

Baltimore.—The company, previously reported as to be formed to erect an electric light plant on the Waterhouse system, will shortly be incorporated, it is said, as the Waterhouse Electric Co. Robert R. Zell, of New York, and William R. Pope and Robert Rennert, of Baltimore, are interested.

Baltimore.—G. W. Parks will erect 18 two-story houses on Cleveland street near Cross. H. E. Shannon will build 12 three-story houses on Biddle street near Greenmount avenue.

Baltimore.—The Baltimore Crematory Co. have let the contract to build their crematory, previously reported, to Philip Walsh & Son. It will cost \$12,000 and is to be completed within two months.

Baltimore.—The Maryland Construction & Land Improvement Co. will build from 15 to 20 houses at Hampden.

Baltimore.—James W. Paca will erect 5 three-story brick buildings on Lanvale street.

Baltimore.—James D. Mason & Co. are now rebuilding their steam bakery, previously reported as burned and to be rebuilt. The main building will be five stories, 50x80 feet, and the bakery four stories, 48x150 feet.

Baltimore.—The Consumers' Water & Illuminating Co., reported last week as chartered to supply Woodbury and vicinity with water and gas, will at once build water works with a daily capacity of 500,000 gallons, and lay about 8 miles of mains at first. Will have a stand pipe 100 feet high by 20 feet in diameter. The gas works will have a daily capacity of 500,000 cubic feet. The company contemplate erecting an electric light plant.

Baltimore.—Ephraim Fuld will erect a three-story building corner of Park avenue and McMechen street to cost \$10,000.

Baltimore.—Henderson, Laws & Co., previously reported as to rebuild their burned candy and cracker factory, have completed a four-story building, 54x200 feet, and will erect at once a five-story building.

Catonsville.—Mr. Cone is preparing to build his hotel, previously reported.

Cumberland.—The Baltimore & Ohio Railroad Co. have overhauled and improved their Cumberland Rolling Mill.

Manchester.—The Western Maryland Railroad Co., (office, Baltimore,) have in view the building of a branch railroad from Manchester to the Baltimore and Harrisburg Railroad. A survey will be made at once.

Phoenix.—The Mount Vernon Co., of Baltimore, lately mentioned as purchasing the Phoenix Cotton Factory, will build machine and carpenter shops.

Washington, D. C.—The district commissioners contemplate building 6 new schools next year.

Washington, D. C.—It is reported that Mr. Bryant, of New York, has purchased a site on 4½ street to build a large hotel.

Washington, D. C.—The Linotype Machine Co., capital stock \$100,000, will be organized to utilize the Mergenthaler type setting machine. E. V. Murphy, room 36 Post building, can give information.

MISSISSIPPI.

Greenville.—An electric light plant will probably be erected soon. The mayor can give information if anything is done.

Greenville.—A cotton factory is talked of.

Jackson.—Water works are being talked of. The mayor can give information.

Meridian.—The Meridian Boiler Factory will be enlarged.

Meridian.—The Warrior Coal Fields Railway Co., and the Pensacola & Memphis Railroad Co. will probably consolidate.

Meridian.—The Sipsey Valley Coal & Mining Co. has been organized, with John A. Lewis as president, W. W. Hungerford vice-president, and J. W. Nichols, secretary and treasurer. The capital stock is to be \$1,000,000.

Meridian.—The Meridian Land & Development Co., capital stock \$50,000, has been organized by W. W. George, Joel P. Walker, J. L. Handley, John W. Broach and others. Will encourage the establishment of manufacturing.

Quitman.—It is reported that parties from Effingham, Ill., have purchased pine timber lands and will build a wood-working factory.

State Line.—The saw mill of Casseby Bros., near State Line, reported in this issue as burned, will be rebuilt.

NORTH CAROLINA.

Asheville.—Avery & Erwin will enlarge the capacity of their furniture factory.

Bilesville.—Ivy & Crowell have erected a ginney.

Bridgewater.—The Richmond & Danville Railroad Co. contemplate building a branch railroad from Bridgewater to the foot of Linville mountain and have made surveys to ascertain the cost.

Charlotte.—The city council contemplate building water works and invite correspondence.

Fayetteville.—The Cape Fear & Yadkin Valley Railroad Co. contemplate extending their railroad to Wilmington, N. C., or Charleston, S. C.

Forest City.—W. H. Jones, of Glen Alpine, will erect a saw, shingle and planing mill.

Gibsonville.—A saw mill is to be erected.

Goldsboro.—It is stated that a stock company is being formed to manufacture shoes. J. E. Robinson can probably give information.

Hendersonville.—A hotel will be built by Mr. Sumner.

Hickory.—Latta & Beard contemplate starting a barrel hoop factory and want machinery.

Kernersville.—There is talk of converting a tobacco factory into a cotton factory.

King's Mountain.—The All Healing Springs property has been purchased by Judge Jones, who will spend about \$40,000 in erecting marble baths, new buildings, &c.

Liberty.—H. C. Causey will rebuild his saw mill, reported in this issue as burned.

Lincolnton.—The Lincoln Lithia Co., previously reported, speak of building a hotel two miles from Lincolnton.

Maxton (P. O. Shoe Heel).—A syndicate have purchased about 100,000 acres of swamp lands in Robeson, Bladen and Columbus counties. They are preparing to open water ways to ship the timber. O. H. Blocker, of Max on, is interested and can give information.

Montgomery County.—It is probable that Mr. Lyon and others will put their mine in operation.

Morganton.—The Morganton Land & Improvement Co. have, it is stated, sold some mineral lands to parties who will develop.

New Berne.—The Washington (N. C.) ice factory is being moved to New Berne.

Sanford.—It is said that work will soon be commenced on the cotton factory previously reported.

Wadesboro.—It is stated that 1,000 acres of land have been leased by parties who will

open and develop brown stone quarry. It is said that \$5,000 of machinery has been purchased.

Wilmington.—The Wilmington Electric Light Co. contemplate enlarging their plant.

Winston.—The city has decided *not* to issue the bonds for the sewers, previously reported.

Worthville.—The J. M. Worth Manufacturing Co., reported last week as putting electric light machinery in their cotton factory, have also put in 40 new plaid looms and a new boiler and engine.

SOUTH CAROLINA.

Black's.—The Chicago, Cincinnati & Charleston Railroad Co. have secured 40 acres of land for shop purposes. They will build a three-story passenger depot.

Columbia.—Connell & Co. have made a proposition to erect a fire-alarm system to cost \$5,000.

Enoree.—It is stated that Granger S. Coffin is preparing to commence work on the cotton factory previously reported to be erected. Arthur B. Rose, of Charleston, is interested in this factory.

Lancaster.—James Manes has contracted to build a church for the Methodists.

Laurens.—G. W. Parkerton & Co. contemplate starting an establishment for manufacturing grates for furnaces.

Laurens.—George B. Anderson will rebuild his corn mill reported last week as burned, and will add circular saw mill next February.

Sanders.—O. P. Wilson is rebuilding his corn mill and gin reported last week as burned.

Talatha.—Benjamin Greene contemplates building a mill and is looking for a site.

TENNESSEE.

Athens.—Work has been commenced on the Athens & Tellico Railroad, previously reported. Young, Livingston & Hall have the contract for the first two miles.

Athens.—The Athens Mining & Manufacturing Co. invite bids for building the hotel and water works, previously reported, and for furnishing about 2,000,000 bricks.

Bristol.—The Baily Construction Co. will build ten houses to cost \$3,500 each.

Bristol.—The Bristol Manufacturing & Trust Co., capital \$50,000, has been organized to manufacture chairs, furniture and building material, and build houses, with J. Wilder as president; W. C. Harrington, secretary, and George A. Blackmore, treasurer. The company will erect four buildings, each 50x80 feet. Want to purchase machinery and two 60 horse-power engines.

Chattanooga.—John Brennen, of Covington, Ky., will, it is reported, soon erect a large building.

Chattanooga.—The Cincinnati (Ohio) parties will probably soon begin work on the brewery previously reported as contemplated. A \$700,000 stock company will, it is said, be formed.

Chattanooga.—M. H. Ward will erect one or more three-story brick buildings at a cost of \$12,000.

Chattanooga.—D. C. McMillin, J. P. McMillin, R. W. Price, C. J. Dunlap and W. H. Converse have chartered the Crest Railway Co., to build a railroad along the crest of Mission Ridge. Are privileged to use dummies, electric motors or cables.

Clarksville.—The Arctic Ice Co., reported last week as organized and to erect an ice factory, will also erect bottling works. H. C. Merritt is president.

Cleveland.—George Carlisle will soon begin work on his contemplated fire-brick works.

Gallatin.—Grainger & Smith, of Kentucky, have purchased the Walton Flour Mills, and will organize a stock company to overhaul and refit the mills with roller machinery. The capital stock will be about \$20,000.

Gallatin.—B. D. Bell, C. W. Watkins, J. C. Dorris and E. O. Buchanan have organized a company to operate the spoke factory of the Gallatin Manufacturing Co. They will improve the factory.

Jasper.—A stock company, has, it is reported, been formed to build a hotel. If correct, A. L. Griffith can probably give information.

Jellico.—The Proctor Coal Co., previously reported as to build a short railroad, are now at work.

Knoxville.—The West End Street Railway Co. have commenced work on their road.

Knoxville.—The Powell's Valley Construction Co. will commence work on the Powell's Valley Railroad, previously reported, on October 8.

Knoxville.—Mr. Keith is erecting a cigar box factory on Cedar street.

Knoxville.—The Standard Oil Co. will erect a brick and iron warehouse to cost several thousand dollars and a cooerage factory. R. Jones has the contract for the latter building.

Knoxville.—The Unaka Lumber Co., previously reported, are preparing to begin work on their saw mills. They will also manufacture lumber. A. Ramsey is president of the company.

Knoxville.—The Barker Manufacturing Co. are increasing the capacity of their bucket and broom factory.

Memphis.—The Bartlett Mill Manufacturing Co. has been chartered by J. B. Blackwell, J. M. Davis, Fred J. Warner, W. O. Edward and W. R. Cross.

Morristown.—The Morristown Mill Co. are building an iron fire-proof warehouse 75x150 feet.

Nashville.—E. W. Cole, L. H. Davis, Volney James, T. D. Fite, M. S. Cockrill, F. Steger, J. L. Valentino and H. W. Buttorff have incorporated the West Nashville Dummy Line & Street Railroad.

Nashville.—Stephen E. Barrow, William Ragio, Eli T. Morris, E. C. Maury and W. H. Hyronemus have chartered the Minnesota Mining Co.

Pulaski.—A stock company is being organized to erect a steam laundry.

Scott County.—The 30,000 acres of land and the narrow gauge railroad reported last week as sold, has been bought by a syndicate headed by W. S. Thomas, of Pennsylvania. The land is coal, iron ore and timber land, and the railroad is 13 miles long. E. F. Madden, Louisville, Ky., can give information.

TEXAS.

Baird.—J. S. Foy has erected a mill and gin.

Commerce.—The St. Louis, Arkansas & Texas Railroad Co. will build a passenger depot and hotel combined.

Corpus Christi.—M. T. Chapman will contract to sink an artesian well for the city council.

Dallas.—The Farmers' Alliance will hold a meeting October 29, and will probably arrange for the building of their cotton factory, previously reported. They expect to begin work by January 1.

Dallas.—The Farmers' Alliance contemplate establishing a furniture and wagon factory.

Denison.—It is reported that Boston (Mass.) parties have bought all the property previously mentioned as purchased by Kansas City (Mo.) parties. They will probably improve the property soon, and may start factories.

Ennis.—Money has been voted to sink artesian wells. T. Y. Doldsborough can give information.

Fort Worth.—A company has been formed to build extensive stock yards, and will probably begin work soon. W. A. Huffman can probably give information.

Fort Worth.—A company will probably be formed to build a large hall for exposition and other purposes.

Fort Worth.—It is proposed to form a stock company to put the I. Dahmann Refrigerator Works in operation.

Gainesville.—The Farmers' Alliance will erect a flour mill and an elevator at some point in Cooke county not yet decided upon.

Galveston.—The Montana, Syracuse & Texas Railroad Co. are, it is reported, making surveys for their road, which is to extend from Miles City, Montana Territory, to Galveston, Texas. The company has a capital stock of \$20,000,000.

Galveston.—The school trustees will erect a new school building.

Goldwaite.—The commissioners' court will receive proposals for a new jail until October 12.

Greenville.—A cotton mill is reported to be erected soon. If anything be done, the mayor can probably give information.

Houston.—A company is to be formed to build a cotton mill.

Houston.—It is stated that a company with a capital stock of \$125,000 has been formed to build a street railroad.

Houston.—Preparations are now being made for the erection of the building for the car wheel works, previously reported. J. F. Dickinson, Marshall, is interested, and can give particulars.

Jefferson.—A proposition has been made to build a railroad to Jefferson.

Kemp.—A hotel is reported to be built. A. Fielder can probably give information.

Kyle.—The Kyle Water Co., capital stock \$15,000, has been chartered to build water works.

Longview.—The Farmers' Alliance will build a cotton warehouse. E. S. Forry can probably give information.

Longview.—The Texas, Sabine Valley & Northwestern Railroad Co., capital stock \$1,000,000, has been chartered to build southward from Longview to some point on Sabine Lake, and northward through Upshur, Camp and other counties.

Marshall.—An association has been formed to raise money to be invested in manufactures. The mayor can give information.

Marshall.—A stock company will probably be formed to build a hotel at Montvale Springs, 14 miles from Marshall.

McKinney.—The capacity of the flour mill previously reported as to be built by the Collin County Milling Association, will be 150 barrels per day. Will also build at once a 75-barrel corn mill. Proposals for necessary machinery are invited.

New Braunfels.—A flour mill is reported as being erected.

Nona.—Arthur Hutchins will put in additional machinery to increase the capacity of his planing mill from 60 M to 80 M feet daily.

San Antonio.—The lowest bid (\$48,300) to erect the large warehouse for Joske Bros., previously reported, has been made by W. S. Pleasants.

San Antonio.—The erection of a sanitarium is contemplated. Dr. Johnson can give information.

San Antonio.—The San Antonio & Aransas Pass Railroad Co. have accepted the plans for their round house and machine shop, previously reported, and have, it is asserted, purchased \$40,000 of machinery.

San Antonio.—The Texas Tribune Publishing Co., capital stock \$10,000, has been organized. J. H. Copeland is president.

Sherman.—There is talk of the Missouri Pacific Railroad Co. (office St. Louis, Mo.) building a railroad from Sherman to Dallas.

Tyler.—The Tyler Car Manufacturing Co., capital stock \$100,000, will be organized to build car works.

Tyler.—The machinery has, it is said, been purchased for the box and barrel factory referred to last week.

Tryon (P. O. Kountze).—E. S. Fitzgerald has added a planing mill to his saw mill.

Warren.—Bruff & Kruger are building a large saw mill with a daily capacity of 70 M feet. Has purchased machinery.

Warren.—The Warren Lumber Co. may possibly build a new planing mill.

Woodville.—Proposals for building a jail will be received until October 17 by the commissioners' court. Separate bids are required for the iron and steel work.

VIRGINIA.

Alexandria.—The Virginia Steel Co., previously reported, has been organized with E. W. Clark as president, and C. M. Clark secretary and treasurer.

Harrisonburg.—Whitesel Bros. are preparing to build a three-story warehouse 31x75 feet.

Lynchburg.—W. F. Mathews will erect a large brick building.

Lynchburg.—Robinson, Tate & Co. propose to erect a three-story brick and stone building 80x80 feet, to cost about \$20,000.

Lynchburg.—Mrs. H. Moses will erect 6 three-story brick houses.

Midlothian.—The Midlothian coal mines have been purchased by Mr. Murphy, of Philadelphia, Pa., and others. They are preparing to reopen the mines and may possibly bore for gas. Job Atkins, Midlothian, can give particulars.

Midlothian.—800 acres of mineral lands have been purchased by parties who will probably open coal mines.

Newport News.—C. P. Huntington, of New York, is considering the feasibility of establishing a large ship-yard.

Newport News.—The Newport News Loan & Improvement Co. has been organized, with F. H. Gordon as president, Joseph Charles vice-president, H. DeB. Clay, secretary, and W. A. Post, treasurer.

Newport News.—E. C. Hillyer is erecting an iron and brass foundry.

Norfolk.—The Baltimore United Oil Co., of Baltimore, Md., will erect buildings for storing oil.

Norwood.—The Sleepy Hollow Mines are being opened by the Virginia Nail & Iron Works Co., of Lynchburg.

Richmond.—The contract for the iron roof of the custom house has been awarded to the Marshall Foundry Construction Co., of Pittsburgh, Pa., at \$8,360.21.

Midlothian.—Northern parties have purchased mineral land and are reported as boring for gas. Job Atkins can probably give information.

Richmond.—The Albemarle Paper Manufacturing Co. will put their new mill in operation on or about the 20th inst. They have increased their capital.

Richmond.—The Midlothian, Manchester & Richmond Railway, Mining & Lumber Co. want bids for building 16½ miles of railroad, no bridges. Address John E. Taylor, 1115 Main street.

Rustburg.—Codwise & Allen have the contract to build 3 miles of the Lynchburg & Durham Railroad.

Swift Creek (P. O. Petersburg).—A peanut factory and a grist mill are to be built soon.

Winchester.—Thatcher & Tavenner will start a creamery, and have contracted for machinery.

WEST VIRGINIA.

Alaska.—Joseph Lawton, Shamokin, Pa.; George Lawton and William Lawton, Fayette Station, W. Va.; N. A. Brown, Caperton, and others have incorporated the Alaska Coal & Coke Co. to mine coal, manufacture coke, &c. The capital stock subscribed is \$15,000.

Charleston.—It is reported that Ohio parties have been prospecting with a view to establishing wood-working factories.

Charleston.—The contract to build the jail, previously reported, has been received by the Pauly Jail Building & Manufacturing Co., of St. Louis, Mo. It will cost \$27,600.

Charleston.—The company reported last week as to be formed to reopen an old gas well near Brownstown, will also engage in mining, manufacturing lumber, &c. R. Workman is working up the company.

Huntington.—The Ensign Manufacturing Co. are doubling the capacity of their soft foundry and are enlarging their wheel foundry.

Malden.—J. Q. Dickenson will introduce natural gas in his salt and bromine works.

Morgantown.—A subscription of \$25,000 has been voted to a railroad to be built through Morgantown to Berkley Springs.

Weston.—It is stated that water works and an electric light plant will soon be built. If correct, the mayor can give information.

Wheeling.—The water board contemplate building a high service reservoir. Will extend water mains.

Winifred.—Romer Winkler, Henry Winkler and John Winkler has purchased all the property of the Black Diamond Coal Co. They will continue to operate the mines.

C. E. Brewster & Co., of Kingsley, Mich., are looking for a location in the South where hickory timber is abundant, with a view to erecting a wood-working factory.

BURNED.

Alto, Texas.—The mill and gin of B. F. Sitman; loss \$5,000.

D'Arboure, La.—The mill and gin of J. L. Bruster.

Batesburg, S. C.—The mill and gin of L. Jordan, 12 miles from Batesburg; loss \$2,000.

Dawnville, Ga.—The saw mill and gin of Felix Vining; loss about \$2,000.

Greenup, Ky.—The saw and grist mill of M. F. Woods; the machinery of the Columbus Buggy Co., and the stave machinery of Stephens & Stephens.

Hartwell, Ga.—The mill of M. D. Smith & Bro.; loss about \$3,000.

Liberty, N. C.—The saw and planing mill of H. C. Causey; loss \$4,500. Will be rebuilt.

Selma, Ala.—The grist mill and ginnery of Isham McKinney, 12 miles from Selma, wrecked by an explosion. The loss is \$3,000.

State Line, Miss.—The saw mill of Casseberry Bros., near State Line; loss \$10,000. Will be rebuilt.

Queen City, Texas.—The dry kilns of the Queen City Lumber Co.

The gins of H. G. Allis, 15 miles from Pine Bluff, Ark.; J. H. Kaster, Cullman, Ala., loss about \$8,500; W. J. Maxwell, in Darlington county, S. C.; B. P. Clifton & Co. in Franklin county, N. C.; F. F. Montgomery, near Lake Providence, La.; James Cade, near Midway, Ala.; Marion H. Smith, King's Landing, Ala.; Waynesboro Oil Mill Co., Waynesboro, Ga.; L. V. Morrill, near Greenville, N. C., and Mrs. C. F. Hodges, Marlboro, Ala., have been burned.

Contemplate Enlarging Plant,

WILMINGTON, N. C., Oct. 3, 1887.

Editor Manufacturers' Record:

Our company contemplate enlarging their plant, but have not yet done so.

WILMINGTON ELECTRIC LIGHTING CO.

A \$30,000 Opera House.

DECATUR, ALA., Sept. 27, 1887.

Editor Manufacturers' Record:

We contemplate the erection of an opera house to cost \$30,000, on the corner of Bank and Bond streets. Work to begin at once. First floor to be occupied by city officials and stores.

R. P. BAKER.

MACHINERY WANTED.

[If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, &c.]

Artesian Well Machinery.—L. I. Lawson, Greensboro, Ala., wants the address of manufacturers of machinery for drilling artesian wells and iron piping for same. Will receive bids for sinking a well.

Brick and Tile Machinery.—J. J. M. Smith, Marble Falls, Texas, wants to correspond with manufacturers of brick, tile and sewer pipe machinery; also machinery for water works complete.

Engine, Rails and Motors.—Stuart & Co., Winchester, Ky., want bids on engines, rails and motors for dummy railroad.

Flour and Corn Mill Machinery.—The Collin County Milling Association, McKinney, Texas, will receive proposals for machinery necessary for a 150-barrel flour mill and a 75-barrel corn mill.

Furniture Machinery.—The Bristol Manufacturing & Trust Co., Bristol, Tenn., want machinery for manufacturing furniture, chairs and building materials. Also want to purchase two 60 horse-power engines.

Handle and Broom Machinery.—J. W. Penn, Atalla, Ala., wants the address of manufacturers of machinery for making axe and broom handles, chairs, &c.

Hoop Machinery.—Latta & Beard, Hickory, N. C., want to purchase barrel hoop machinery.

Iron Bridge.—The county commissioners, Waco, Texas, will shortly advertise for proposals for building an iron bridge estimated to cost \$50,000 or \$60,000.

Plumbing and Gas Fitting.—Proposals for the plumbing and gas fitting of the courthouse at Waco, Texas, will be received until October 10 by the supervising architect of the treasury, Wm. A. Freret, Washington, D. C.

Safe Machinery.—The Birmingham Safe & Lock Co., Birmingham, Ala., wants to buy all kinds of machinery for manufacturing safes. Address H. F. Bridewell, vice-president.

Water Works.—The Athens Mining & Manufacturing Co. want bids for building water works and desire plans and specifications for a hotel to cost \$30,000.

Water Works.—The city council of Charlotte, N. C., invite correspondence in regard to building new water works.

Wooden Bridge.—Charles H. Milby, Houston, Texas, will receive until October 17 bids for building a wooden bridge at Andrews Bend.

Wooden Bridge.—Proposals for building a wooden bridge 178 feet long over Tobesofkee creek, will be received until November 4 by W. G. Smith, Macon, Ga.

Will Rebuild Saw Mill.

LIBERTY, N. C., Oct. 3, 1887.

Editor Manufacturers' Record:

I shall rebuild my saw mill at once.

H. C. CAUSEY.

An Artesian Well Company.

HOUSTON, TEXAS, Sept. 27, 1887.

Editor Manufacturers' Record:

The Texas Artesian Well Co., head office, Houston, Texas, has been chartered with capital of \$50,000. Jos. F. MEYER, Prest.

Brick Works Contemplated.

FORT PAYNE, ALA., Oct. 2, 1887.

Editor Manufacturers' Record:

Some Birmingham parties are contemplating the erection of large common and fire-brick works here.

FORT PAYNE LAND & IMPROVEMENT CO.

To Build Gas Works.

MACON, GA., Oct. 3 1887.

Editor Manufacturers' Record:

Work will be begun on the new Consumers' Gas Works, at Macon, Ga., this month. Am completing plans, etc., as fast as possible.

JESSE W. STARR.

LITTLE ROCK, ARK., Sept. 29, 1887.

Editor Manufacturers' Record:

I expect to build new cotton press factory either here or at Memphis in November and December; to be ready by January 1, 1888, unless we sell our business.

D. H. THOMAS.

Erecting Soap Factory.

NORFOLK, VA., Sept. 29, 1887.

Editor Manufacturers' Record:

We are now fitting up a modern soap factory to manufacture our Vellino soap, at a cost of over \$7,000. Our capacity will be about 60,000 bars per week.

VELLINO MFG. CO.

NORTHPORT, ALA., Sept. 30, 1887.

Editor Manufacturers' Record:

I have ordered a new outfit, boiler, engine and saw mill, to set up near Northport, in this county. Am looking for it every day and will put it up at once.

WM. R. HUGHES, SR.

Will Rebuild Corn Mill.

LAURENS, S. C., Oct. 3 1887.

Editor Manufacturers' Record:

I will rebuild my corn mill at once. Will put in circular saw mill during February of 1888. Will put in cotton gin and press during July and August of 1888.

GEO. B. ANDERSON.

Proposals Wanted.

BIRMINGHAM, ALA., Sept. 26, 1887.

Editor Manufacturers' Record:

For the next two weeks, say until October 15, 1887, bids will be received for the erection of a city hall and also a handsome school building in this city. Here is a fine opening for enterprising contractors, as well as local contractors have their hands full.

A. O. LOOSE.

To Develop Mineral Lands.

YORKVILLE, GA., Sept. 23, 1887.

Editor Manufacturers' Record:

I am about to open up different mining enterprises in this (Paulding) and adjoining counties, and if prospects continue favorable as at present, on a pretty large scale, with sufficient means to back all I undertake, I shall use considerable machinery.

J. H. VREELAND.

Will Erect Ice Factory.

WALDO, FLA., Oct. 1, 1887.

Editor Manufacturers' Record:

The American Refrigerating Construction Company, of Harrisburg, Pa., will erect cold storage house, 61x203 feet, partly two stories, with ice capacity twenty tons per day. Machinery and material ordered and work commenced, arrangements also made for two artesian wells at same time.

NED E. FARRELL.

Building a Stone Mill.

ISRELL, ALA., Sept. 28, 1887.

Editor Manufacturers' Record:

We are building a mill at Darlington quarries and will have it in operation by the 15th of October. And the probabilities are that our branch railroad will be extended to the iron beds on Hamilton creek, some two or three miles southwest of our quarries.

S. L. FOSSICK & CO.

Will Increase Capital Stock.

AIKEN, S. C., Sept. 25, 1887.

Editor Manufacturers' Record:

The directors, and, in fact, every stockholder of the Craig Kaolin Co., have agreed to increase the capital stock from \$15,000 to \$50,000, which will be done on the 15th of October, 1887. The reason of this is because, that, in addition to the clay beds we had previously discovered, we have discovered a bed of greater extent and of fine quality, white and free from grit, so situated that almost an unlimited number of hands can work at once. We now have clay in shed drying which will soon be ready for shipment. Our prospects are bright.

CLAUDE E. SAWYER.

Proposals Wanted for Building Iron Bridge.

SAN ANGELO, TEXAS, Sept. 30 1887.

Editor Manufacturers' Record:

Our county will build an iron bridge 150 feet span, with approaches 240 on one side and 180 on the other. Piers to be 45 feet high or above low water, that being considered safe from high water. Roadway to be 18 feet.

WM. S. KELLY.

New Machinery.

AUGUSTA, GA., Sept. 30, 1887.

Editor Manufacturers' Record:

We have recently purchased 16 F. and P. cards, 2 railways and drawing frames. This will enable us to slightly increase production and improve the quality of our product.

O. G. LYNCH, Supt. Enterprise Mfg. Co.

Opening Iron Ore Mine.

CARTERSVILLE, GA., Sept. 30, 1887.

Editor Manufacturers' Record:

My company is opening out a vein of brown hematite ore that shows solid for a half mile, and expect to be able to mine it at a very small expense when opened, and will have no trouble to get out from 100 to 150 tons per day.

W. C. BAKER.

Will Add Planing Mill.

APALACHICOLA, FLA., Sept. 27, 1887.

Editor Manufacturers' Record:

D. M. Munro & Co. will build a planing mill to their saw mill. The same firm is also building a tug boat 80 feet over all; depth 6 feet. Columbus & Gulf Navigation Co. have leased wharf lots to build warehouse on. This company will establish a line to the East by way of the gulf.

H. W. JOHNSTON.

CONVERS, GA., Oct. 1, 1887.

Editor Manufacturers' Record:

A strong effort is being made by myself and others to organize a local community enterprise, with a capital of \$300,000, for the purpose of opening up vast granite quarries. Uncovered beds of immense extent lying within three to six miles of our little city. One of the objects of the company is to build from here a railroad line to this granite. Capitalists say we have the finest and most extensive fields in the world.

J. A. B. STEWART.

Machine Shop to be Built.

POWHATAN, ARK., Oct. 1, 1887.

Editor Manufacturers' Record:

Mr. L. Maxfield, who is at present connected with some railroad machine shops at Helena, Ark., is the man who has recently negotiated for a lot upon which to build a machine shop at Black Rock. I am reliably informed that he has engaged or bought the lot and is trying to get carpenters to go to work at the house, but hear he is now sick himself.

JNO. K. GIBSON.

Machinery Wanted.

BRISTOL, TENN., October 3, 1887.

Editor Manufacturers' Record:

The Bristol Manufacturing & Trust Co. (chartered) has just been organized, with J. Wilder as president, Geo. A. Blackmore treasurer, and W. C. Harrington secretary. Cash capital \$50,000. The company has purchased 8 acres for factory site and will erect four buildings at once, each 50x80 feet. They are ready to negotiate for machinery, and, among other things, they wish to buy two 60 horse power engines. They will manufacture chairs, furniture and building material; also erect houses to rent and to sell.

B. L. DULANEY.

Machinery Wanted.

ATTALLA, ALA., Sept. 27, 1887.

Editor Manufacturers' Record:

I want the names of some companies who manufacture machinery for making chairs and broom and axe handles. I am trying to organize a company to manufacture the above.

J. W. PENN.

To Build Large Gas Works.

MEMPHIS, TENN., October 1, 1887.

Editor Manufacturers' Record:

We have purchased 25-acre site, just outside the city limits, at a cost of \$50,000, upon which to erect our works and mechanics' residences. We have the right of way and contract with the city government, and anticipate pushing the work as quickly as we can, and think we will complete in 10 to 18 months. EQUITABLE GAS LIGHT CO.

To Develop Mineral Lands.

DECATUR, TEXAS, Sept. 29, 1887.

Editor Manufacturers' Record:

We are working under a charter, with \$500,000 capital, to develop and work coal, iron, copper, silver, gold and platinum. We will in a short time, I think, be able to bring before the public something of great interest and value. W. H. CUNDIFF,

N. W. TEXAS MINING & EXPLORING CO.

Oyster Cannery in Florida.

CHESTER, FLA., Sept. 22, 1887.

Editor Manufacturers' Record:

The Bell River Canning Co., P. O. address Fernandina, Fla., is an incorporated company, with capital stock of \$12,000, seventy-five per cent. paid up. We have two buildings, one 60x140 feet, one 35x90 feet. Steamer 55 feet, and boats, &c., and 60,000 bushels oysters on our own beds.

BELL RIVER CANNING CO.

To Build Additional Reservoir.

CHARLESTON, S. C., Sept. 29, 1887.

Editor Manufacturers' Record:

The Charleston Water Works Co. will begin at once the erection of an additional reservoir of 5,000,000 gallons capacity. This reservoir will adjoin the third deep artesian well which is now being bored, and will be built above ground, with embankment, so that the water will flow by gravity into the first reservoir, a mile distant, where the pumping works and stand pipe are erected. When the present well is finished, Charleston will have three flowing artesian wells, each 2,000 feet deep and yielding 2,000,000 gallons daily. The new reservoir will be about 200x250 feet, and 15 to 18 feet high.

C. J.

CHARLESTON, W. VA., Sept. 27, 1887.

Editor Manufacturers' Record:

I am making plans, which are well advanced, to organize a company to reopen my gas and oil well at Brownstown and engage in mining, manufacturing lumber and building houses, &c., and carry on a general mercantile business.

R. WORKMAN.

Rails and Engines Wanted.

WINCHESTER, KY., Oct. 3, 1887.

Editor Manufacturers' Record:

We contemplate constructing a combination dummy and horse car line of 2 or 3 miles in length. Have exclusive franchise for 10 years. We want bids on cost of engines, rails and motors.

STUART & CO.

To Start Fire Brick Works.

TORONTO, OHIO, Oct. 4, 1887.

Editor Manufacturers' Record:

It is my intention to start a fire brick works in Cleveland, Tenn. I was there last week and made all arrangements. Got twenty acres to erect my building on.

GEO. CARLYLE.

RICHMOND, VA., Sept. 28, 1887.

Editor Manufacturers' Record:

The Midlothian, Manchester & Richmond Railway Mining & Lumber Co. has secured charter and right of way and expects soon to begin work. Will be a short road 16½ miles and light work. Could be built in 90 days. No bridges. Construction companies can address JNO E. TAYLOR,

1115 Main St., Richmond.

Contracted to Build Water Works.

NASHVILLE, TENN., Sept. 28, 1887.

Editor Manufacturers' Record:

We have contracted to build the Bessemer, Ala., water works complete; 5 miles of mains, two streams dammed and a standpipe 20x100 feet on hill top. Reservoir capacity behind dams about 4,000,000 gallons. Estimated daily supply 500,000 to 750,000 gallons.

SCOVILL & IRWIN.

To Develop Oil and Asphalt Lands.

BIRMINGHAM, ALA., Sept. 28, 1887.

Editor Manufacturers' Record:

860 acres of oil property purchased and company has been organized with paid up capital of \$86,000, under the name of the Union Oil, Gas & Asphalt Co. A fine pocket of asphalt found at surface, and oil a heavy body lubricating, oozing from under mountain. Will develop at once.

H. O. HOST, Secretary.

To Develop Talc Mines.

MILLEDGEVILLE, GA., Sept. 27, 1887.

Editor Manufacturers' Record:

I intend to form a company to open and work my talc steatite or soapstone mine. It is in inexhaustible quantities about one and a half miles from city, and three hundred yards from Macon & Augusta Railroad.

J. F. NEWELL.

New Enterprises at Louisville.

LOUISVILLE, KY., Sept. 29, 1887.

Editor Manufacturers' Record:

The Gayner Electric Co. have organized with a paid up capital of \$200,000 to manufacture fire alarms and police telegraph, and to deal in and be agents for electric supplies and machinery of all kinds. John H. Sutcliffe is president; John J. Barriel, vice-president; I. F. Gayner, superintendent and electrician. Operations will begin October 1. A. Britton & Sons will open big stock yards at East Louisville at once. Capital stock \$25,000.

T. E. ALLISON.

Factory to be Put in Operation.

MORGANTON, N. C., Sept. 29, 1887.

Editor Manufacturers' Record:

We have leased our shuttle block factory to Sergeson Brothers, of Philadelphia, and they will start working the first of October.

R. B. BRITTON & CO.

Information About the South

THE marvelous mineral and timber wealth of the Southern States, their unrivalled capabilities as a manufacturing area, and the astonishing progress they are making in developing their natural resources and in utilizing their facilities for manufacture, are attracting the attention of the whole world. The extent of these resources and advantages is so fully and carefully set forth, and the progress of this development so faithfully chronicled from week to week in the **MANUFACTURERS' RECORD**, that it is now accepted everywhere as unquestioned authority on Southern affairs, and its statistics and statements are drawn upon by almost every writer or speaker on any Southern topic.

Its weekly issues constitute an authentic history of the industrial progress of the Southern States. It furnishes every week a vast variety of information on Southern affairs that can be gained from no other source. It discusses in its editorial columns and in its correspondence every topic of Southern interest. It presents the resources and development of the South in all their phases. To all who are in any way interested or concerned in the prosperity of the South, or who care to keep posted as to the industrial and commercial progress of that section, the **MANUFACTURERS' RECORD** is indispensable.

Manufacturers and others desiring to locate in the South, will find the **MANUFACTURERS' RECORD** invaluable. In every issue there are many offers from Southern towns and land companies offering free sites and financial aid to those who will establish new manufactures, or remove their plants from the North to the South. There are hundreds of openings throughout the South for factories of all kinds, foundries and machine shops, brick yards, agricultural implement works, handle factories, all classes of wood-working establishments, &c. If you desire to know what the South is doing, and what opportunities it offers for success in every line of industry, great and small, read the **MANUFACTURERS' RECORD**.

As the leading industrial paper of the South, the **MANUFACTURERS' RECORD** covers that entire section, and is closely read by manufacturers of all classes, mining operators, builders and contractors of railroads, water works, mills of all kinds, &c., merchants, capitalists and business men generally. It is undoubtedly the best advertising medium in existence through which to reach the rapidly developing manufacturing and mining interests of the fourteen Southern States. It is the most widely quoted and highly commended industrial journal in America. It is live, active and progressive, and is the recognized authority throughout the country upon the growth of the South.

Never before in the history of the South were the prospects so brilliant for a wonderful activity in all manufacturing, mining and railroad interests. Moreover, the abundant crops ensure great prosperity to the farmers. More machinery, and supplies for cotton and woolen mills, wood-working establishments of all kinds, iron works, railroads, mines, &c., will be purchased by the South during the next twelve months than ever before in the same length of time; and those who desire to secure a share of this trade, will find that an advertisement in the **MANUFACTURERS' RECORD** will prove a profitable investment, as it will bring their machinery directly before buyers in all parts of the South.

Sample copies and advertising rates mailed on application.

Published by the **MANUFACTURERS' RECORD CO.**

SUBSCRIPTION \$3.00 A YEAR.

BALTIMORE, MD.

Will Build Planing Mill.

GADSDEN, ALA., Sept. 30, 1887.

Editor Manufacturers' Record:

Will erect planing mill at once. Will manufacture sash, doors, blinds, moulding, etc. Plant cost about \$3,500. Want a good practical contractor and builder. Our town is booming.

W. S. STANDIFER.

To Build 50 or 60 Miles.

DENISON, TEXAS, Sept. 27 1887.

Editor Manufacturers' Record:

It is the intention of our company at present to put under construction about 50 to 60 miles of road.

DENISON & WASHITA VALLEY R. R. Co.

A. H. COFFIN, Secretary.

SANDERS, S. C., Sept. 30, 1887.

Editor Manufacturers' Record:

I am rebuilding my corn mill and gin as fast as I can; houses are up and waiting for the machinery.

O. P. WILSON.

Contracted to Build a Railroad.

BALTIMORE, MD., Sept. 29, 1887.

Editor Manufacturers' Record:

We have taken contract to build Baltimore and Drum Point Railroad. Will commence work at once. Headquarters at Lushby's Post Office, Calvert county, Md., for present.

ROGERS & CLEMENT.

To Build Opera House.

GALLATIN, TENN., Sept. 29, 1887.

Editor Manufacturers' Record:

We have contracted for and will put up right away in Gallatin an opera house, two stories high, 70 feet front and 100 feet deep; to have three stories in first story, iron fronts, 14 feet high; second story is to be 22 feet.

SIMPSON & SONS.

JACKSONVILLE, ALA., Sept. 28, 1887.

Editor Manufacturers' Record:

Mr. W. J. Aderholt has erected a cotton gin, mill and wool carder under one roof.

L. W. GRANT.

LYNCHBURG, VA., Oct. 1, 1887.

Editor Manufacturers' Record:

We propose to construct a business house on corner Lynch and 8th streets, this city, sufficient for three good size warehouses or grocery stores. It is possible we may let the building to contract in a few days, or may postpone work till next spring or early summer. It will be 80x80 feet, three stories high, brick and stone.

ROBINSON, TATE & Co.

A Cigar Factory.

ELKTON, MD., Sept. 27, 1887.

Editor Manufacturers' Record:

A cigar factory has been started by Bowland & Wells in the "May Building" in Elkton. Are at present working 10 men, but number will be increased as soon as more complete arrangements can be made.

R. D. BOWLAND.

Added New Machinery.

GLEN ETHEL, FLA., Oct. 1, 1887.

(P. O. Island Lake.)

Editor Manufacturers' Record:

We have just reset all of our machinery and added a planer and equalizing saws and several smaller saws for making cypress orange boxes and vegetable crates. Heretofore we have manufactured nothing but shingles.

WEKIVA SHINGLE CO.

Extending Water Works.

ORANGEBURG, S. C., Oct. 1, 1887.

Editor Manufacturers' Record:

Our water works in business locality finished and working splendidly. We expect to continue the works to cover entire city. We expect to erect city hall sometime during present year, to cost about \$5,000. Not decided yet.

J. S. ALBERGOTTI.

Contracted to Build 3 Furnaces.

FLORENCE, ALA., Oct. 3, 1887.

Editor Manufacturers' Record:

Contract was signed on 1st for the building of three 150-ton furnaces by the North Alabama Furnace, Foundry & Land Co. Work to commence at once. Capital stock \$1,000,000. Dr. J. S. Lawton, Atlanta, Ga., is president, and J. H. Field, Columbus, Miss., general manager. Principal office is to be at Florence, Ala.

FLORENCE L. M. & M. Co.

W. B. WOOD, Pres't.

Saw and Planing Mill to be Erected.

KISSIMMEE CITY, FLA., Sept. 30, 1887.

Editor Manufacturers' Record:

A saw mill, planer and moulding machine will be erected at Florndelphia, Fla., a new town on one of finest islands of the State, having also the only rich timber tract between Kissimmee City and the Gulf. A very fine hotel is being erected also by the company, of which John L. Hill, of Philadelphia, is the leading spirit.

DOUGLASS & TOWNE.

To Build a 7-Mile Railroad.

CHATTANOOGA, TENN., Oct. 1, 1887.

Editor Manufacturers' Record:

We have organized a company and obtained a charter to build a railroad on the top of Missionary Ridge, running from the tunnel to Rossville, a distance of 7 miles, making connections with lines operated between the city and the unsurpassed residence property on top of the Ridge, giving easy, comfortable and quick transportation to all points on the highlands of Chattanooga. We expect to commence work as soon as all details of right of way, &c., are settled.

D. C. McMILLIN, JR.

Enlarging Electric Light Plant.

STAUNTON, VA., Sept. 29, 1887.

Editor Manufacturers' Record:

We are now running one 45-light dynamo for street lights, and have contracted for one 50-light to be used for street lights and the 45-light which we have will be used for the commercial lamps to be completed by the first of October.

CITY WATER & ELECTRIC LIGHT WORKS.

JOHN T. LONG, Supt.

To Build Flour and Grist Mill and Machine Shop.

SHEFFIELD, ALA., Sept. 30, 1887.

Editor Manufacturers' Record:

Mr. F. H. Grace will be here in a few days to establish a wheat and grist mill and machine shop, for which the Sheffield Land Co. has agreed to donate a site, which was selected by him very recently. The Sheffield Hotel Co. are now getting ready to erect their brick and stone hotel, which is to contain 8 stories and a spacious office, lobby, lavatory, &c., on the first floor under which will be full basements for various hotel and other purposes, with large dining room, parlor, 102 commodious bed rooms in upper stories. The hotel will have first class steam elevators, steam laundry, steam heating apparatus, water works, electric lights, and in fact will be modern and first class in all of its appointments.

Building a Railroad.

SEABOARD, N. C., Oct. 3, 1887.

Editor Manufacturers' Record:

We are building a standard guage railroad for our own use, and will have it completed to this place in a few days. As it is a private enterprise and for our use, as soon as our business demands require it we shall run to an i pass Jackson.

JOHN H. WORSHAM, Gen. Mang'r.

RUTLAND, GA., Sept. 28, 1887.

Editor Manufacturers' Record:

We have taken contract work on the Georgia Southern & Florida Road from now until next May.

T. C. HAMPTON & Co.

C. R. MAKEPEACE & CO.
ARCHITECTS and Mill ENGINEERS
PROVIDENCE, R. I. Plans, Specifications and Estimates furnished for Cotton and Woolen Mills.

Athens, Tenn.**BIDS**

AND

PROPOSITIONS WANTED

The Athens Mining & Manufacturing Co. at Athens, Tenn., desire to receive at once bids for the erection of water works upon the property of the company. They also desire to induce diversified manufacturing enterprises aggregating \$500,000 or \$600,000 capital to locate upon their property, which has been laid off for a beautiful city. In addition to donating sites to such manufacturing industries, they will subscribe liberally to the capital stock of such plants, or will pay a cash bonus to each. Athens is one of the best towns in the United States for the manufacture of cheap iron of excellent quality. Work has begun on the new railroad to the immense red and brown hematite iron fields, only 8 to 14 miles east of the town, and to the noted Tellico iron and variegated slate deposits, 22 miles distant. This railroad will be pushed to completion, and will connect with the Knoxville Southern Railroad, making a through trunk line. The company will furnish a better quality of ore than is at present mined in the Chattanooga or Birmingham iron districts, in any quantity at lowest figures, and desire to open negotiations at once for the erection of one or more blast furnaces. Analyses of the ores, fairly made, will be furnished upon application, and an inspection of the ore fields by experts is solicited.

Plans and specifications for a \$30,000 hotel are desired at once, or the company will take stock in a stock company for its erection, or will give a cash bonus to the proper party desiring to erect it. This is an excellent opportunity for a good hotel man.

The railroad will open up at once large deposits of Tennessee variegated marble, fine timber and tan bark.

Handle, spoke and fellow establishments could find no better location anywhere.

Correspondence solicited at once.

THE ATHENS MINING & MFG. CO.

COPY OF ORDINANCE

Passed by the Council of the Town of West Point, Virginia, on the 21st day of April, 1879, and re-enacted and approved on the 22d day of March, 1887.

Be it ordained by the Council of the Town of West Point, Va., that any party or parties investing in property in this town for the purpose of conducting any enterprise, such as manufactories, packing houses, &c., and actually operating the same, they shall be exempt from all corporation taxes upon such property, and all machinery and improvements thereon, for the term of ten years from the purchase of such property.

It is also ordered that the Mayor is hereby instructed to advertise this ordinance in the "MANUFACTURERS' RECORD," a paper published in the City of Baltimore, Md.

E. WILKINSON, Mayor.

STEEL RAILS

COMPLETE OUT-FIT FOR

Logging, Mining and Plantation

RAIL AND TRAM ROADS.

Light Sections Rails and Spikes in stock. Locomotives, Logging Cars, etc.

NEW AND SECOND HAND.

HUMPHREYS & SAYCE,

OFFICE NO. 1 BROADWAY, N. Y.

MORRISTOWN,**The Metropolis of Upper East Tennessee.****IN BRIEF:**

It has a population of 3,500—incorporated. It has more than doubled its population since 1880.

It has the finest courthouse and opera house in Upper East Tennessee.

It is the center of the richest and most extensive agricultural district in the State.

It has an elevation of 1,400 feet, and affords mountain views of surpassing beauty.

It has five commodious brick church edifices and two good brick school buildings.

It does the largest retail and wholesale business of any city in Upper East Tennessee.

It offers more and better opportunities for paying business enterprises than any city in the South.

It has hundreds of thousands of acres of unexcelled forests of merchantable timbers accessible to it.

It has the finest climate in the world, an abundance of pure spring water, and is noted for its healthfulness.

It is building more business houses and private residences in proportion to its population than any city in the State.

It is surrounded with iron and zinc mines and quarries of gray and variegated marbles of incalculable extent and value.

Its land companies and building association place desirable homes within reach of men of small means as well as large.

It is the commercial, manufacturing and railway center of Upper East Tennessee, having immediately tributary to it nine of the wealthiest counties in East Tennessee and a large part of Western North Carolina.

It has railroad facilities equal to those of any point between Chattanooga and Lynchburg, and they will be increased in the next eighteen months by the building of the short line to the coal fields at Cumberland Gap.

It has a citizenship composed almost exclusively of native-born Americans, large numbers of whom are recent emigrants from New York, Connecticut, Pennsylvania, Ohio, Virginia, Indiana, Wisconsin and other States.

It has two banking institutions, extensive stove works, a manufactory of agricultural implements, a large tannery, three lumber mills, the largest commercial flouring mill in East Tennessee, two marble works, a carriage and wagon factory, and many industrial establishments of lesser note.

ROBERT L. GANT,

President Business Men's Association.

Farm, Mineral

AND

Timber Lands.

Parties desiring to obtain **Fin City Property** in a growing manufacturing center, and **Truck Farms** of superior excellence in close proximity to the markets of the country, and **Mineral and Timber Lands** of great value, will do well to consult Messrs. A. B. Whiteaker & Co., of Bristol, Tenn. The **Mineral and Timber Lands** controlled by us are within a radius of fifty miles of Bristol, and are pronounced by experts to be the most valuable in the sections of East Tennessee and Southwest Virginia. The **Timber Lands** are of virgin growth and in close proximity to the railroads. The **Mineral Lands** are the richest in this section of the South. **Capitalists and Prospective Settlers**, as well as **Home Seekers**, will do well to consult us regarding our lands, which we offer at the most reasonable prices. We will be glad to furnish any or all kinds of information regarding lands in this section of the State. Address

A. B. WHITEAKER & CO.

BRISTOL, TENN.

FOR SALE.**400,000,000 feet Timber**

150,000,000 feet White Pine.
30,000,000 feet Poplar.
200,000,000 feet Hemlock.
10,000,000 feet White Oak.

Ten miles from railroad to be completed in twelve months.

E. B. MOON, Bristol, Tenn.**D. W. K. PEACOCK,****Real Estate Agent,**

CARTERSVILLE, GA.

Minerals a Specialty.

Refers to THE HOWARD BANK, Cartersville, Ga.
J. W. RAMSEY, Atlanta, Ga.

THE FINEST MINERAL REGION IN THE UNITED STATES

Developed and Traversed by the
South Atlantic & Ohio
Railroad.

Bristol to Become the Manufac-
turing Center of the Blue
Ridge Region.

A Word for the Capitalist and the
Prospective Settler.

BRISTOL, TENN., September 27, 1887.

In my travels throughout the South I have visited few places where the prospects and advantages are so striking and so sure of profitable returns as one will find in this section of the Southland. Situated on and running along the line between the States of Tennessee and Virginia, occupying a high and commanding position, it is easily accessible by means of two great trunk lines of railways, the E. T., Va. & Ga., and the Norfolk & Western, to all citizens of the two States, along whose border the town lies. It is located in a productive and healthy region of country, surrounded by inexhaustible forests of timber for building, and yielding such an abundance as to make its trade in timber a prominent and remunerative business. It is contiguous to coal beds that are capable of yielding a supply of the best qualities of bituminous coal and cannel coal for manufacturing and household purposes, that will last into an illimitable future for as dense a population as ever will people these rapidly-growing States.

It only needs that a knowledge of the wonderful resources of this section, East Tennessee and Virginia, of which Bristol-Goodson is the natural trade center, be disseminated, to attract to this place home-seekers and home builders as well as capitalists and investors, from all the various sections of our country. Fortunes await men of capital and energy, who will erect mills and factories at this point. It possesses all the advantages for supplying the manufacturing in almost every conceivable line of industry with the raw material. The best and cheapest coal can be secured in unlimited quantities, and great unbroken forests supply all the varieties of timber for manufacturing and building purposes. Ash, oak, cedar, walnut, white and yellow pine, poplar, chestnut, hickory, and almost every variety of wood that grows, can be found in quantities that will be inexhaustible for ages, in those sections of both States that are tributary to Bristol. A large district of timber lies north of Bristol along the banks of Holston river, and between that and Walker's mountain, within view of the city of Bristol, almost an unbroken mountain forest of twenty-five miles in extent.

In this district there are said to be large deposits of iron ore, zinc and lead, thus having on the same land the wood from which to burn your charcoal, with which to run your iron and steel furnaces. There is also a great deal of magnetic ore in this district, which is most valuable in the manufacture of steel. Most, if not all, of the south side of the great Clinch mountain range may be said to be an unbroken forest of valuable hard wood timber; and north of Clinch river there are immense bodies of hard wood timber of miles in extent, that stand in their primitive gigantic growth, untouched by the axe; and here we see the oak, the poplar, and the tulip, reach their greatest magnitude. Here trees are numerous, six feet in diameter and sixty or more to their first limb. Here are also black oak, red oak, chestnut oak, hickory, chestnut, locust, ash, basswood,

cucumber tree, buckeye, sugar-maple and hemlock.

The South Atlantic & Ohio Railroad, extending from this place by way of Eastville, in Scott county, Virginia, to Big Stone Gap, in Wise county, will be an important railway link, connecting with the Louisville & Nashville at Big Stone Gap. This road is being pushed with great vigor and will be completed to Big Stone Gap in the early part of the coming year. When completed it will form an important link into the great iron and coal producing regions of Southwestern Virginia and Southeastern Kentucky. The scenery along this line is picturesque and affords the lover of nature many sites of interest and pleasure. This road passes through the great Natural Tunnel in Scott county, 923 feet long, 60 to 125 high, the roof of which is 400 feet thick, and is approached by canyons, the walls of which are of immense height, which in comparison to the Natural Bridge in Rockbridge county, Virginia, would be like a mountain to a mole hill, or a foot log to the Brooklyn bridge.

This company propose to extend this line of road to their magnetic iron ores of North Carolina, where they own and control 59,000 acres. The ore outcrops have been examined here for nearly 60 miles. The veins at Cranberry are from 30 to 70 feet thick, and are first-class steel ores, as good as any in the United States.

The South Atlantic & Ohio Railroad Co. has been the important factor in the growth and development of Bristol-Goodson, and the plan yet to be devised by this corporation will unfold many wise and attainable schemes whereby this place will yet assume an importance second to none in Tennessee and Virginia.

This company has for its directors and stockholders such well known capitalists and men of large views and progressive ideas as follows: John H. Inman, New York; Geo. S. Scott, New York; Wm. P. Clyde, New York; N. Thayer, Boston; Benj. Dean, Boston; Wm. D. Jones, of Philadelphia; E. T. Norton, president Louisville & Nashville Railroad; St. John Boyle, Louisville, and president Kentucky Union Railroad.

The company has a capital of \$4,000,000, and they propose to use it in the grand development of this section of country. Owning and controlling over 1,600 acres of land in the immediate vicinity of Bristol-Goodson, it is proposed to build a veritable town in the mountains of Virginia and North Carolina which will eclipse any other movement of its kind in the New South.

It was my pleasure to accompany Dr. J. M. Bailey, general manager South Atlantic & Ohio Railroad, in a drive through this twin city and its outskirts, where the land of the company is situated, and it affords me pleasure to state that as far as I am able to judge, this place, of all the "new developing towns of the South," has fully as much real and substantial advantage for prosperity and perpetuity as any that I have seen during my tour in the South. There is no disputing the fact that of all locations for a manufacturing and commercial center this place is most assuredly the best location between Lynchburg, Va., on the East, and Knoxville, Tenn., on the West. The facts are obvious. It is the best possible location for the making of cheap pig iron. It has great advantages for manufacturing iron in all its merchantable shapes, such as rails, car wheels, bar iron, castings, spikes and nails. All grades of pig iron can be made here at a cost of from 38 to 50 per cent. less than at Pittsburgh. No better sites for manufacturing purposes will be found in the entire South. A fine stream of water, nearly reaching the town, affords water power for numberless manufacturing.

As far as the eye can reach this company lays claim to some of the most valuable timbered, iron and coal lands in the State, and in the town they propose donating excellent sites for manufacturing purposes free of all cost. The company propose at a very early day to erect furnaces of a capacity of 1,000 tons weekly. They will be built upon the plans of those at Pulaski, but with a number of the more modern improvements. The water supply will be by gravitation. The coal and coke will be in close proximity, while the iron ore will be only 14 miles distant. Thus it will be seen what an immense saving will be in the manufacturing—the saving of coal alone making the iron at least \$2 cheaper than at any other point.

The lands owned and controlled by this company are some of the best and richest in the country. In Scott, Wise and Dick-inson counties, Virginia, (in the very heart of the iron and coal beds of the State,) they have 120,000 acres; and when the facili-

ties for economical mining possessed by this region are taken into consideration, this property becomes at once very valuable. As a result of all these favorable circumstances, this region is to-day producing very cheap limonite ore. The cost of mining and delivering the same on the cars of the South Atlantic & Ohio Railroad will not exceed over 50 cts. per ton. It is safe to say that this district can compare favorably in the cost of production with any other brown hematite iron ore producing region. It must not be forgotten that the advantage possessed by the State of Virginia for working steel and iron ore is probably not equalled by any other section of our country, when the cost, transportation facilities and nearness to consuming markets are taken into account. Since 1880 Virginia has increased her production of pig iron from 29,934 tons to 157,483 tons. In Johnston county, Tennessee, this company have 20,000 acres of iron land of the best quality, with seams of brown hematite twenty feet thick. In Unicoi county, Tennessee, 15,000 acres of manganese, specular and magnetic ores predominating. Take it all in all, Johnston and Unicoi counties are beyond all question the richest in iron ores in Tennessee, and added to this is the fact that it is more easily reached by the railroads than any other counties in the State. In Mitchell county, N. C., 59,000 acres of magnetic iron ore, lying east and south of the great Cranberry property. In this county of North Carolina is found the most remarkable iron ore deposits in North America. The ore is pure magnetic, massive and generally coarse-granular, and exhibits strong polarity. The steep slopes of the mountain gorges and ridges are covered with blocks of ore often of hundreds of pounds of weight, and in many places bare vertical walls of massive ore 10 and 15 feet thick are exposed, and the trenches and open diggings which are scattered without order over many acres of surface everywhere, reach the solid ore within a few feet of the surface.

On Stock creek, about 50 miles from Bristol, the company have 4,500 acres of coal lands of inexhaustible supply, one seam having been discovered from 4 to 5 feet thick of splint coal, most desirable for gas and domestic purposes. It is an acknowledged fact that along the line of the South Atlantic & Ohio Railroad and contiguous thereto are to be found all the bituminous coals of Pennsylvania; and a further fact which might be mentioned, this section has also a coal-bearing strata which is most productive in seams of great variety and thickness. While the area covered by the coal fields of this section is not so large, yet it is probable that there is as much, if not more, of this mineral fuel—the anthracite field excepted—than the great iron State of Pennsylvania. At Stock creek, in the middle of the coal fields of this State, the thickness of the coal is surprising, and the day is not far distant when this coal region will be producing some of the best grades of coal in the United States. The coal fields penetrated by the South Atlantic & Ohio Railroad exceed in area and thickness any other coal regions of the United States, and another coal field immediately underlying it is equal in thickness, which produces coke equal to the best Connellsville make. These coal ranges, lying in horizontal shape as they do above water level, having just dip enough and natural drainage, present advantages for cheap mining nowhere surpassed in the coal regions of the United States.

The South Atlantic & Ohio Railroad in its construction to Big Stone Gap really is cutting through fields of coal and iron of inexhaustible supplies. Within 50 or 60 miles of Bristol, in Wise and Scott counties, Va., there are coal fields that for extent of area, for continuous length and depth of their veins and quality of their yield, are not equalled by any that have as yet been discovered in this country. One vein that had been opened eighteen miles continuously, disclosed a depth of 14 feet of a quality which surpasses that of the famous Connellsville coking coal, or any other on the continent. In close proximity to this vein, there is a large section of country, rich and prolific with a very superior quality of iron ore, and also with magnetic ore there contiguous; there is an inexhaustible supply by bounteous nature, of the three requisites for the manufacture of steel in quantity and quality, and for cheapness of production, that cannot be surpassed, if equalled anywhere on the globe.

This road has not only opened the rich coal fields just mentioned, but also immense beds of iron and magnetic ores, and along its line and at its terminus are great stratas of variegated marbles ten miles in extent, of a quality that cannot be surpassed for all the purposes for which this

valuable stone is used. On the southern border of that rich district of coal and mineral land heretofore spoken of, and on the head waters of Stock creek, in Scott county, Virginia, are 4,500 acres of coal and iron property, which has on it large quantities of bituminous and splint coal, in stratas of 3 to 5½ feet in thickness, free from partings of slate with good sandstone, floors and roofs, with good drainage, and is about fifteen feet above water level, and will when this railroad is completed be within about an hour of Bristol.

Along the line of the road are to be found the best quality of red fossil ore, two veins of which are from 39 to 46 inches thick. The brown hematite is found in large quantities in veins from 8 to 19 feet thick. These ores are on the immediate line of the road in many places, the veins being cut through as the road progresses.

Analysis of red iron ores from Walden's Ridge on line of the South Atlantic & Ohio Railroad, taken from United States Geological survey.

| | No. 3 | No. 4 |
|-----------------|-------|-------|
| Iron..... | 48.47 | 48.40 |
| Sulphur..... | 0.132 | 0.131 |
| Phosphorus..... | 0.015 | 0.123 |
| Insoluble..... | 21.75 | 24.53 |

Analysis from coals from Norton's Bank Stock Creek mines.

| | |
|-------------------------|-------|
| Moisture at 120° c..... | 0.35 |
| Combustible matter..... | 91.36 |
| Ash..... | 8.39 |
| Sulphur..... | 0.06 |
| Phosphorus..... | 0.094 |

At Big Stone Gap the coal supply is inexhaustible and of the best quality. There is one vein 6 feet thick, another 8 feet thick, while a third measures 14 feet in thickness. The eight foot vein is called the coking vein, the analysis of coke from this vein being 96½ per cent. fixed carbon, three per cent. of ash and a trifle less than one half of one per cent. sulphur. Here, also, is to be found a cannel coal vein 30 inches thick, underlaid by 3½ feet of splint coal. These coal veins commence immediately as you pass through Big Stone Gap, through which Roaring Fork of Powell river cuts its way, and extends clear through the great Black mountain of Kentucky. These coal fields are twenty miles wide and forty miles long.

At Eastville, the county seat of Scott county, this company owns large tracts of land on Moccasin ridge to Spear's ferry on the Clinch river, containing thick and continuous veins of specular and red hematite ore of remarkable purity and singularly free from phosphorus, this section having been used long before and during the late war, and was pronounced the best in this portion of the country. In this district is also found miles of some of the most exquisite variegated marbles to be seen anywhere, suitable for all kinds of building and decorative purposes.

SYNOPSIS OF THE MINERAL LANDS OWNED
BY THE SOUTH ATLANTIC & OHIO
RAILROAD.

59,000 acres of magnetic iron ore in North Carolina, mostly in Mitchell county. Here the ore outcrops have been examined for nearly 60 miles. The veins are from 30 to 70 feet thick.

The following analysis of these ores is taken from the report of the North Carolina Geological Survey (official). They are evidently from the richer portion of the vein, and from the absence of phosphoric acid are first class steel ores—as good as any others in the United States.

| | | | | | | |
|-------------------|-------|-------|-------|-------|-------|-------|
| Iron..... | 68.34 | 66.22 | 61.58 | 58.49 | 55.33 | 63.79 |
| Phos. Acid..... | trace | trace | trace | trace | trace | 0.8 |
| Titanic Acid..... | none | none | none | none | none | none |
| Sulphur..... | trace | trace | trace | trace | 0.25 | 0.35 |
| Silica..... | 4.16 | 5.74 | 11.48 | 9.08 | 4.93 | 6.30 |

20,000 acres of brown hematite ore in Roan and Laurel Valleys, in Johnson county, Tenn. The belt of country containing these ores is 39 miles long and 6 miles wide, and has seven distinct ranges or lines of deposits. A railroad on the streams mentioned would bisect it longitudinally, none of the deposits (save in one or two places) would be over three miles from it, in many places would be directly on it, and in all cases it would be down grade from the mines, so that the ores are in the most advantageous position possible for being reached easily and cheaply, by side tracks and switches. The mouth of Roane creek, the southern end of this belt, is about 16 miles from the Cranberry mines, and some 7 miles northwest of the ores on Elk river, and the northern end is 50 miles from the large seams of coking coal in Virginia. Johnson county is the extreme northeastern one of the State of Tennessee. The State Geologist in speaking of it says: "It contains more iron ore than any other county in the State," and to his testimony I would add, that in my fifteen years' experience in inspecting ore fields I have never seen one where the ores are so abundant, more uniform in quantity

and quality, where they are so conveniently placed to be all worked by one railroad, or where water is more abundant and convenient for all ore washing that may be necessary. As a further indication of the richness of this county in good ore, should be mentioned that of the 22 Catalan forges in Tennessee, 16 are in John-on county, and of these, 12 are in the belt of which I am speaking, and 3 more within five miles of it."

Analyses of ores from six of the most prominent deposits specially mentioned, made since Prof. Maury's examination:

| | | | | | | |
|---------------|-------|-------|-------|-------|-------|-------|
| Metallic iron | 56.19 | 56.12 | 54.30 | 53.90 | 56.33 | 53.29 |
| Silica | 3.08 | 3.90 | 2.99 | 9.23 | 4.71 | 5.58 |
| Phosphorus | 0.31 | 0.43 | 0.98 | 0.32 | 0.60 | 0.73 |

The company also own valuable land in Washington county, Va., where the red and brown hematite ores are found in an area of from 12 to 15 miles long by 2 miles wide. All this ore is unusually fine, and, as far as analyzed, is suitable for Bessemer steel. When it is taken into consideration that the iron ores are adjoining and parallel to the coal fields, it is certain that a basis of large iron mining and iron smelting will be opened in this section. Added to the fact that the coal with their measure with their thick seams of coking coal extending evenly, regularly and without break or fault from Virginia into Kentucky, it becomes almost an assured fact that of all localities Bristol-Goodson is the place for a manufacturing center.

15,000 acres of land in Washington and Unicoi counties, in Tennessee, where the best seams of coal is to be found and in large quantity.

RED AND BROWN HEMATITES OF WASHINGTON COUNTY, VIRGINIA, AND SULLIVAN COUNTY, TENNESSEE.

A short distance to the west of the last described ores is another ore belt, two miles wide, and 15 miles long, that would be tributary to a railroad from Tennessee to the Virginia coals by means of a branch line 15 miles long. Such a line would pass longitudinally through this belt for 10 miles, and at no place would the most remote deposit be more than a mile therefrom.

As far as examined and analyzed all the ores in it are suitable for Bessemer steel, the red hematite giving from 60 to 65 per cent, and the brown hematite giving over 55 per cent, of iron, while a 1 have less than 0.05 per cent, of phosphorus. There are several lines of outcrop and deposit in this belt, but no one of these has been traced throughout the whole length of it. In fact, there has been comparatively little exploration beyond some six or seven places that have been worked to supply small local furnaces. In addition to this there are many exceedingly promising outcrops where no work has been done. Thus, for instance, on one farm of 261 acres the brown hematite is so abundant that the ore thrown out of small test pits more than filled them when shoveled loosely back, and for a space of some 40 acres over which I walked back and forth, the red hematite was lying loose all over it in great quantities. Nos. 7 and 8 are analyses of these. In fact, all the ores of this district are unusually fine, for every sample that one picks up from the ground is of the same character. Some of these ores would have to be washed to get rid of the clay that is occasionally mixed with them. The following analyses are by Professor A. S. McCreath, of the Pennsylvania State Geological Survey, from his own selecting. In every case he took several hundred small pieces, so that the whole would represent actual and practical working averages.

| | No. 1. | No. 2. | No. 3. | No. 4. | No. 5. |
|------------|--------|--------|--------|--------|--------|
| Iron | 56.15 | 57.37 | 55.05 | 55.55 | 64.65 |
| Phosphorus | 0.05 | 0.02 | 0.02 | 0.02 | 0.02 |
| Silica | 7.88 | 7.90 | 2.39 | 5.50 | 2.97 |

| | No. 6. | No. 7. | No. 8. | No. 9. |
|------------|--------|--------|--------|--------|
| Iron | 55.55 | 55.03 | 66.47 | 57.60 |
| Phosphorus | 0.25 | 0.23 | 0.03 | 0.29 |
| Silica | 2.97 | 6.81 | 2.92 | 3.70 |

No. 1 is a red hematite; vein three and a half to six and half feet thick.

No. 2 is red and brown hematite mixed; vein 20 feet thick; about half of this thickness is ore, the rest clay.

No. 3 is red hematite; vein four and a half to 14 feet thick.

No. 4 is brown hematite; vein 20 feet thick, mixed with 25 per cent, of clay.

No. 5 is red hematite; forming a cap to No. 4.

No. 6 is red hematite; mine now covered in; vein said to be 8 to 10 feet thick.

Nos. 7, 8 and 9 are ores from outcrops. This belt is of much importance on account of its nearness to the coal field (only 55 miles) as well as from the fact that it could give the nearest possible Bessemer ores to the Ohio river furnaces so soon as a railroad is opened through.

The company's lands in and adjacent to the towns of Bristol and Goodson are rich in all the varieties of timber, iron and coal,

while fertile meadows lie stretched out on every hand. The situation and topography of these lands are remarkable. No finer or more commanding site have I seen for the building of a great manufacturing center. Surrounded by hills and dales, meadows and farms, with a magnificent climate and natural advantages, it appears that this location was originally intended for a wonderful industrial center. It would well pay manufacturers and capitalists of the North and West to come down and investigate the wonderful advantages and resources of this place before locating sites or investing capital elsewhere. A knowledge of the great natural advantages which this location is possessed of, is all that is required to attract to it from the North, East, South and West the enterprising and progressive men possessed of capital, push and energy.

I predict for Bristol-Goodson within the next five years a commanding position as a commercial and manufacturing point, and as the center of vast coal and iron industries. * HINTON A. HELPER.

The Florida Hot Water Heater.

Some months ago we illustrated the Florida Steam Heater, made by The Pierce, Butler & Pierce Manufacturing Company, of Syracuse, New York, and now we give illustrations of the Florida Hot Water Heater, made by the same company.

The Florida Hot Water Heater is a circulating heater. The water from the heating surface returns to the heater at the rear, at the bottom of the fire ring, passing around to the side and out through the top where it enters the first ring. The water then passes through the ring horizontally over the fire and out on the opposite side into the next ring above, and so on through the rings into the pipe then through the radiators and returns to the heater to be again heated.

Every section, before leaving the works, is thoroughly tested under high pressure to avoid any possibility of imperfections.

They are faced off around each water way opening on each side where they come together, and a most perfect joint is secured by use of thin asbestos gaskets between each of the sections at these points; through each of these water ways passes a three-quarter inch selected steel bolt by which the sections are securely bound together; these bolts being exposed simply to the heat of the water, there is a compensation in the expansion and contraction of the different metals so that these joints, it is claimed, never leak.

The sections bolted together, set upon the base casting, and are surrounded with two jackets of No. 20 iron, the inner one black and the outer one galvanized, with 1/4-inch asbestos board between them. First, however, there is a cast iron sectional jacket ring about six inches high placed around the sections resting upon the base. The jacket rests upon this, and is held in place with iron bands at top and bottom made tight with draw screws.

The fire is in the heart of the heater, and comes in direct contact with the lower sections. The center of the fire is from 10 to 15 inches thick (according to the size of the heater,) and slopes off from the magazine to the sides, so that as the fire gets low the ashes do not lay against the fire surface and destroy its effectiveness.

This heater is practically adapted for burning hard coal and coke as a self-feeder, and with little extra attention in management will successfully burn wood, hard and soft coal as a surface burner. The combustion chamber is so arranged as to secure a perfect combustion of the fuel and gases.

Through the top of the dome is arranged a new self-feeding device for fuel, which, it is said, overcomes every objection ever made to a magazine feed in a heater. The feed door to fuel chamber is at the front edge of dome, at convenient height to easily handle coal; the door always rests tight shut by its own weight, and throws back out of the way when putting in coal. The fuel chamber is large, with an opening on to center of fire.

Self-feeding of the coal, as in the "Florida" is now very generally accepted as one of the indispensable features of a heater for domestic uses, as by it heat is carried all night and a comfortable temperature had in the morning when it is most appreciated.

The wide-mouthed front door opening on to surface of the fire, admits of the usual method of feeding a surface fire, if one prefers to use the Florida as a surface burner.

Economy of fuel depends largely upon

claim that "in the mild days of winter and the chilly mornings and evenings of spring and autumn, just that pleasant degree warmth that is necessary to make the house comfortable may be had, without overheating it, and yet, with no more trouble than the ordinary care of a stove, it will give you balmy Florida's climate in your home during the coldest weather of our Northern winters."

This is accomplished not only in one or a few rooms, but throughout the house.

The manufacturers will give any further information desired as to price, &c.



FIG. 1.—FLORIDA HOT WATER HEATER.

the arrangement and exposure of the surfaces to the heat, and the proper adjustment of their proportions to the water spaces. In this respect the Florida presents many very strong claims as a most economical and efficient heater; its water spaces being narrow and exposed on every side to the direct action of heat from the fire, comparatively little heat keeps the water at a heating temperature, with consequent small consumption of coal.

THE MANUFACTURERS' RECORD, of Baltimore, is the acknowledged organ and representative of Southern progress, and should be subscribed for by every manufacturer, mill owner and mechanic in the State who wants to be kept fully informed as to what is going on in our section. Its columns are open without cost to all who have progressive items to give it, and you cannot do better than to send it brief reports of all additions made to your mills or other indus-



FIG. 2.—FLORIDA HOT WATER HEATER.

There is nothing more important about a heater than its grate. A good grate should be simple in construction, easy to shake, should readily dispose of ashes and clinkers which collect on it, and should be so made that, when necessary, it may be dumped and cleaned with the least difficulty and dirt. All these points, it is said, are secured in this heater.

The "Florida" is simple and handy in all its parts and so completely regulated and easily controlled that the manufacturers

trial establishments, for in addition to advertising thereby your own investments you are advertising your town, county and State to tens of thousands of readers all over the country.—Aberdeen (Miss.) Examiner.

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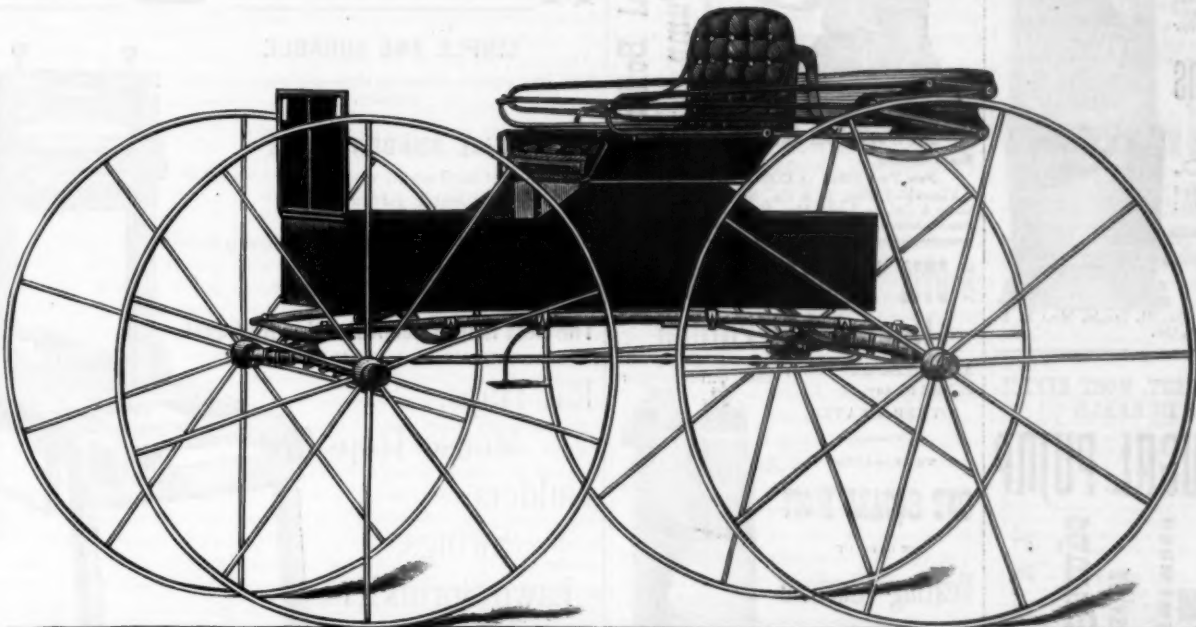
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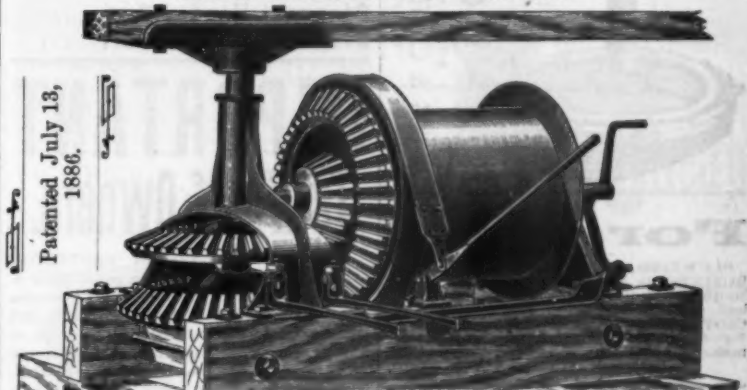
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without being obliged to stop the horse. With the powerful brake and automatic safety attachment, and
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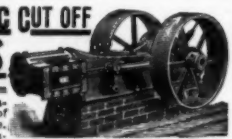
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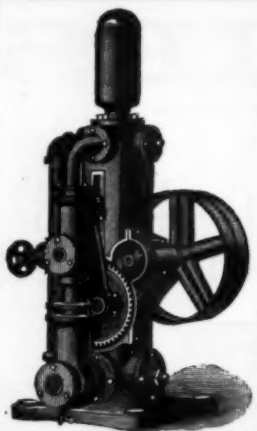
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Simple, Efficient, Durable and Economical. Send for catalogue.

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THE OTIS TUBULAR FEED WATER Heater and Purifier

Accomplishes more than is claimed for any OTHER HEATER.

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ONE SQUARE FOOT

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SIMPLE,

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Thoroughly purifies the Water, separates and deposits the impurities and boils the Feed Water before it enters the Boiler.

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THE PATENT PILING PROTECTOR CO., BRUNSWICK, GA., is prepared to protect piling from the Teredo and other Marine Pests in any Harbor in the United States, and will erect its plant, which is inexpensive, in any Harbor where a contract is offered, and prepare piling from the timber near at hand. The process is thoroughly effective, indestructible in salt water, and protection for ten years guaranteed. Is fully protected by letters patent. Has been tested for six years; is better than metal covering; as good and for piling in some respects better than crocoting; costs less than one-half as much as metal covering or crocoting. Circulars fully explaining process will be sent upon application. Correspondence solicited.

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The Celebrated

KEYSTONE WRINGERS

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And has greater capacity than any other in the market.

FINE RUBBER ROLLS

FRAME—best hard maple wood. IRON—best malleable galvanized.

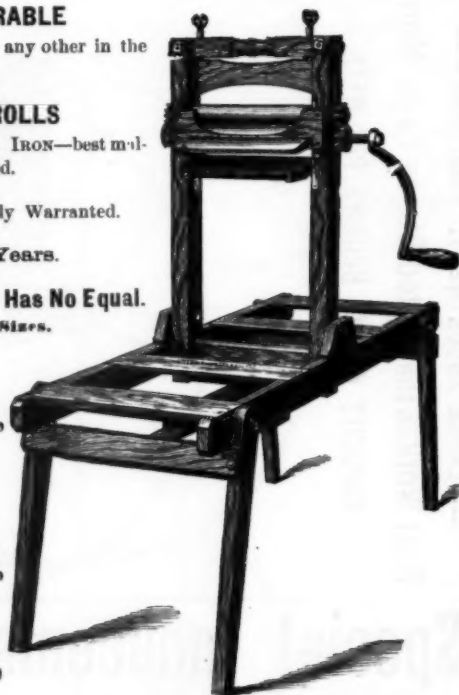
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Should Last 15 Years.

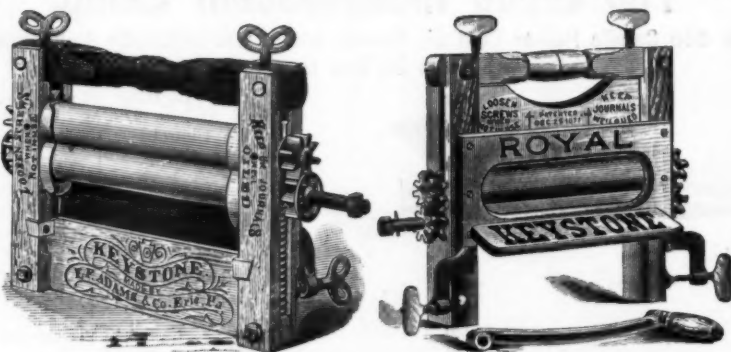
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Rat Traps,
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Ladders,
Swings,
Lawn Sprinklers,
Bread Cutters,
Steam Flue Cleaners,



The Sampson Cork Puller, Trucks, Etc.



Facts About Clothes Wringers.

IN the construction of the **KEYSTONE WRINGER** we have recognized the fact that there are several important features, in some of which all other wringers fail to a considerable extent. Most prominent among these are the Springs; they have been made heretofore of wood or rubber, neither of which have sufficient elasticity to meet the requirements of a really first-class wringer; besides this, both wood and rubber Springs will lose their elasticity in a short time; then the wringer is but little better than it would be without Springs. To overcome this difficulty, some manufacturers of wringers have adopted the elliptic form of Steel Springs, effecting a slight improvement in durability. But to use a Spring of this kind in a wringer, they have to confine it to such a limited length that it is impossible to get the amount of elasticity that is really necessary, besides they seriously injure the frame by the side pressure which they have.

In the **KEYSTONE WRINGER** there are two long, heavily-coiled Wire Springs, made from the very best quality of Bessemer Steel and tinned. They are placed below the lower Roll and occupy that part of the wringer frame that is necessary to accommodate the clamps, admitting the use of two very long Springs that will exert all the pressure necessary and give the wringer fully double the capacity of any other form of Spring. The great length of the Springs gives them greater durability than can possibly be obtained from any other form of Spring of any kind of material, and they exert all their pressure directly upon the journals of the Rolls without injury to the frame.

It is very evident that a wringer with such Springs will do better work with less labor and trouble, and that the Rolls (which are the life of the wringer) are much less liable to be injured than would be the case if it had the clumsy, inelastic Springs that are used in other wringers.

IT PAYS TO HANDLE GOOD GOODS.

The Best are Always the Cheapest.

We offer Special Inducements to Hardware Dealers to Handle our Full Line. Write for Particulars to

THE F. F. ADAMS CO., ERIE, PA.

TRADE NOTES.

MR. WM. H. GREEN, of Brown Bros. & Co., general mill furnishers, Providence, R. I., will visit the carding mills of the South this month.

J. HENTHCOAT, of Providence, R. I., has brought out a new cotton gin for cleaning Sea Island cotton. It has been thoroughly tested and proved entirely satisfactory. We are informed that it will be ready for the trade the coming winter.

A LONG-FELT need for a good and cheap mill for grinding drugs, coffee, chemicals, etc., seems to be satisfied in the Empire City Mill, manufactured by Messrs. J. B. Waring & Sons, New York. These mills have been put in operation on substances heretofore considered incapable of economical reduction with such success that all users stand ready to testify that it is a perfect mill.

THE John Abell Engine & Machine Works, of Toronto, Ont., have secured the right to manufacture the Reliance Safety Water Columns, the patents of which are all owned by the Reliance Gauge Co., of Cleveland, Ohio, and will supply the steam users of the Dominion on the same liberal terms adopted by the American manufacturers of these safeguards. Thirty days' trial and satisfaction guaranteed on all sales.

THE Reliance Gauge Co., of Cleveland, Ohio, recently received a third order from Mr. P. F. Dundon, the San Francisco boiler maker, for three dozen of the Reliance Safety Water Columns. These safeguards are rapidly coming into general use, and are very popular wherever known. The manufacturers will be pleased to send an illustrated price-list to any one interested.

IMPORTANT TO HARDWARE DEALERS.—Hardware dealers who are anxious to keep an elegant line of lamps should send without delay for the new handsomely illustrated catalogue and price-list just published by the lamp and brass works of W. J. Gordon, Cleveland, Ohio. Several new styles and specialties in lamps have just been brought out by this enterprising concern and are selling wonderfully well. See their advertisement in this issue and write for catalogue and price-list, sent free upon application.

THE list of sales of Babcock & Wilcox boilers for September include the following:

| | H. P. |
|---|-------|
| United States Electric Lighting Co., Newark, N. J., 4th order..... | 164 |
| Voight Milling Co., Grand Rapids, Mich., 2d order..... | 140 |
| Carmela G. Laguna, Palermo, Sicily..... | 40 |
| Walker Bros., London, for Colombo, Ceylon, 4th order..... | 25 |
| M. Lassig, Chicago, Ill., 2d order..... | 125 |
| House of Representatives, Washington, D. C., 1st order..... | 73 |
| M. Casserat, Amiens, France, 3d order..... | 84 |
| Tiberghien Freres, Turcoing, France, 2d order..... | 240 |
| Walker Bros., London, for Colombo, Ceylon, 3d order..... | 35 |
| Edison Machine Works, Schenectady, N. Y., (making 37 orders from the various Edison companies)..... | 150 |
| East London Water Co., Waltham Abbey, England, 2d order..... | 93 |
| Anglo-American Brush Electric Corp'n, Boston, England..... | 80 |
| S. B. Wilkins Co., Rockford, Ill., 2d order..... | 61 |
| Indiana Soldiers' and Sailors' Orphan's Home, Knightsville, Ind..... | 240 |
| Sr. Don Julio F. Opestequia, Cienfuegos..... | 736 |
| Electriciteits Maatschappij, Berlin, Germany, 3d order..... | 45 |
| Electriciteits Maatschappij, Berlin, Germany, 4th order..... | 45 |
| Harlem Lighting Co., New York city..... | 300 |
| Fowler Bros., Sioux City..... | 348 |
| McWhirter, Ferguson & Co., Edinburgh, Scot. | 40 |
| Chicago Sugar Refining Co., Chicago, Ill., 2d order..... | 816 |
| J. & G. Fowler, New York city, for export..... | 438 |
| Making a total of..... | 4,438 |

THE HOWELL PATENT SUSPENSION WHEEL.—This is a new and valuable invention, based on purely scientific principles, and is so constructed that expansion and contraction of the steel and iron have no detrimental effect upon it, as all the parts expand or contract in unison. The strain under a test comes on all parts of this wheel alike, as the pull on the spokes is downward from the top of the rim, and thus each spoke aids in retaining the circular form sustaining its

portion of the weight. It does not depend upon the rigidity of the spoke in sustaining weight, but upon the textile strength, enabling the manufacturers to utilize all the strength of the metal. The wheel has a patent axle, very strong, retaining all the strength of the solid rod, as no holes are drilled in it or metal displaced for pins or wedges to hold the hubs at the required distance apart to produce the required tension in all parts and completing the general result—a perfectly rigid wheel, light, yet strong, durable, simple and cheap. The Howell wheel is destined to take a front rank, and, though a new thing, yet it is already highly commended by wheel-barrow and truck manufacturers, who have experimented with them successfully. The Howell wheel will be manufactured in Covington, Ky., by the Howell Wheel Co., who will take pleasure in answering any correspondence on the subject.

BLOWING ENGINE FOR BLAST FURNACE OR STEEL PLANT.—The Cleveland Ship-building Co., successors to Cuyahoga Steam Furnace Co., of Cleveland, Ohio, advertise "one new first-class blast furnace engine for sale at a bargain." It is a splendid piece of machinery. Size of steam cylinder 36x48; has 4 Corliss valves, neatly lagged with wood and covered with Russia iron; the blowing cylinder measures 84 inches diameter by 48 inches stroke, with most approved wind valves, adapted to pressure required; wooden packing in air cylinder, set out with springs; has cast iron follower, removable in sections, and Otis steel crossheads, with flexible connection to piston rod. The total weight of engine is 145,000 pounds. The fly wheels are cut in halves for convenience in shipping and weigh 42,000 pounds. This engine is complete in stock and ready for shipment. It includes throttle and Y pipe; is complete and first-class in every particular. Write to Cleveland Ship-building Co. for further information.

Literary Notes.

ASSAY AND ANALYSIS OF IRON AND STEEL, IRON ORES AND FUEL. By Thom Bailey, Associate Chemist of the Royal College of Science, Ireland; also Consulting Analyst and Assayer, Birmingham, Eng. Published by E. & F. W. Spon, London, and 35 Murray street, New York.

This work, coming as it does at a time of increasing activity in the iron industry, will be greatly appreciated by those engaged in its manufacture. The careful and well considered collection of data; the simple, clear and concise expression of facts, presenting only the main points of the subject considered, will make it very valuable for reference. It has a table of atomic weights, one of the analysis of iron ores, and one of factors for calculation. There are twenty chapters describing methods of work and procedure, and sixteen illustrations. It is carefully indexed to chapter and subject.

THE October Wide Awake will delight the boys who love a humorous story about one of themselves, for in it Maurice Thompson tells an irresistible story about one of his own boyish escapades, entitled "My First Voyage." They will also enjoy "A Catskill Bear Story," by Henry Tyrrel. There are three delightful out-of-door articles: E. S. Brooks' "Football," Grant Allen's "Pitcher-Plant," and Amanda B. Harris' "Indian-Corn Talk;" these have fine illustrations, by Hassam, Barnes and Langren. Charles Egbert Craddock concludes the powerful serial of "Keedon Bluffs;" Mrs. Catherwood's Wabash River serial, "The Secrets at Rose-ladies," takes Sister, and the Mound Diggers too, through strange adventures; Howling Wolf, in Mrs. Champney's Indian serial, "The Lost Medicine of the Utes," goes campaigning with Geromino; young Van-griff, in "A Young Prince of Commerce," forms a railroad syndicate; Margaret Sidney's Concord paper describes and illustrates the Concord Library with its famous treasures, Mr. French's studio where the

statue of the "Minute Man" was modeled, and the site of Thoreau's hut at Walden Pond. Wide Awake is \$2.40 a year. D. Lothrop Co., publishers, Boston.

THE American edition of the Illustrated London News for October 1 contains a full-page illustration of Miss Mary Anderson as Heroin in "A Winter's Tale," pictures of the new Chinese naval squadron, and an illustrated article on English Exploration in Egypt, besides other articles of interest and pictures of merit. Dealers now furnish this noted periodical for ten cents a copy, and at the office of publication, 237 Potter Building, New York, subscriptions are received at very favorable rates.

Important.

When visiting New York city, save baggage express and carriage hire, and stop at the Grand Union Hotel, opposite Grand Central Depot.

600 handsomely furnished rooms at \$1 and upwards per day. European plan. Elevators and all modern conveniences.

Restaurants supplied with the best. Horse cars, stages and elevated railroads to all depots. You can live better for less money at the Grand Union Hotel than any other first-class hotel in the city.

THE American House, Boston, has water-works in every chamber, and we believe there is not a dark room in the hotel. That's what travelers want this time of year—fresh air and plenty of running water!

THE BEST.—First-class accommodations at Palace Hotel, Cincinnati, \$2 and \$2.50 per day. Elegant rooms, fine table and all conveniences.

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Solicitor of U. S. and Foreign
PATENTS,
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VICTORIOUS EVERYWHERE.

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BOOKS FOR

Engineers and Manufacturers.

METAL-PLATE WORK; its Patterns and their Geometry. Also notes on metals and rules in mensuration. For the use of tin, iron and zinc-plate workers, copper-smiths, boiler makers and others. By C. T. Mills. 321 pages, with six plates and numerous diagrams. 8vo, cloth \$3.

Practical Electric Lighting. By A. B. Holmes. Explaining the principles in plain language, and giving instructions as to the proper care of the apparatus. 183 pages with 87 illustrations. 8vo, cloth \$1. Catalogue and circulars free.

E. & F. N. SPON,
25 Murray Street, NEW YORK.

Hardware and Gun Trade: Quote our

\$5 Clay Pigeon Trap.

Electrotypes furnished gratis for catalogues. Liberal commissions. 80-page book free. Address LIGONWAY CLAY PIGEON CO., Cincinnati, O.

ROOTS NEW IRON BLOWER



Has fewer parts than any other blower. Also, Blacksmith Blowers, Portable Forges, Tappet Irons, and Gas Exhausters.

P. H. & F. M. ROOTS, Manufacturers.
CONNEYSVILLE, IND.
Send for Priced Catalogue.
No. 7 CANAL STREET.

FOR SALE. Machinery.

No. 19 Bliss Press, same as new.
No. 2 Garvin Miller, same as new.
Garvin Tapping Machine, same as new.
Polishing Machine, (Diamond), same as new.
No. 3 Emery Grinder, same as new.
12-in. Double Table Shaping Machine, new.
10-in. Shaper, Boynton & Plummer, new.
Planer, 24x4, second-hand.
Planer, 30x4, Lincoln, second-hand.
Planer, 24x6, Pond, new.
Planer, 30x8, Pond, new.
Planer, 24x5, Pond, new.
No. 1 Garvin 9-Spindle Drill, good order.
25-in. B. G. S. F. Upright Drill, new.
24-in. " " " " " "
36-in. " " " " " "
30-in. Upright Drill, B. G. S. F. "
48-in. Old-style Drill, B. G. "
Engine Lathe, 32x16, new.
Engine Lathe, 28x16, new.
Gage Turret Lathe, complete with slide rest, same as new.
Perkins' 16x6 Lathe, excellent order.
Gage Hand Lathe, excellent order.
Engine Lathe, 24x14, new.
Engine Lathe, 28x10, new.
Engine Lathe, 28x12, new.
1 Engine Lathe, 20 in x 8 ft., compound rest, second-hand.
1 Engine Lathe, 16 in x 7 ft., second-hand.
Engine Lathe, 23 in x 15 ft., new.
Engine Lathe, 15 in x 6 ft., B. G. Screw-Cutting.
Engine Lathe, 16 x 6 ft., power cross-feed, new.
Engine Lathe, 18 x 8 ft., power cross-feed and compound rest, new.
Engine Lathe, 20 in x 8 ft., power cross-feed and compound rest, new.
1 11-in. x 5-ft. B. G. Hand Lathes, with Chucks, second-hand.
An Electro-Plating Equipment.
Scientific Forge, Fairbanks'.
6-inch Double Cutting-Off Machine. Wood, Jenison & Co.
Patterson Forge with Hood No. 1.
Cold-Rolled Shafting, Hangers, Pulleys, &c.
AGENTS FOR
L. W. Pond Machine Co. Planers.
Currier & Snyder Drills.
McMahon & Co. Lathes.
Fay & Scott Engine Lathes.

FRASER & ARCHER,
121 Chambers St., New York.

For Sale Cheap

One No. 4 Sturtevant Blower, with counter shaft; second hand.
One No. 1 Keystone Forge; second hand.
One No. 6 Buffalo Forge, with water tank for power; new.
Two Boiler Feed Pumps, suction 1 inch, and discharge 1 1/2 inch.
One Power Boiler Punch, second hand; punch 3/4 hole.
One Lawson Vertical Gas Engine, 3 horse power.
One Horizontal Steam Engine, 3 horse power; second hand.
One Vertical Steam Engine, 3 horse power; new.
One Vertical Steam Engine, 5 horse power; new.
One Vertical Steam Engine, 12 horse power; new.
One No. 6 Friedman Injector.
One Planer; second hand; 30 inch by 30 inch by 9 feet.
One Combined Engine and Boiler, 3 horse power; new.
One 40 to 60 horse Automatic Engine; new.
One 15 horse power Horizontal Engine and Boiler; new.
A complete Laundry Outfit; used 3 months.
One Blake Steam Pump, 8-inch suction, 1 1/4-inch discharge.
One Horizontal Tubular Boiler, 30 inches diameter x 16 feet, with 60-3 inch tubes; also 48-inch x 12 feet, with 34-3 inch tubes.

WM. C. CODD,
2010 and 2012 Aliceanna Street.
BALTIMORE, MD.

For Sale.

A 100 horse-power stationary Engine and two Stationary Boilers, together with fronts, grates, castings and trimmings. Said Engine and Boilers have been used, but have been thoroughly rebuilt, and are in A No. 1 order, and will be sold very low; or can attach a Mammoth Saw Mill and sell all low, and take part in good yellow pine lumber. Apply to

RICHMOND MACHINE WORKS.
RICHMOND, IND.

Georgia's Wonderful Iron Deposits at Etowah.

Written Expressly for "Dixie" by
W. Waring Habersham,
Mining Engineer.

(From Dixie.)

Georgia has long been noted for her mineral wealth, but it has remained for a company of enterprising Atlanta capitalists to develop the very finest mineral property in the State, if not in the entire South. Many years ago, long before the war, an iron furnace, known as the "Etowah"—deriving its name from the Etowah river, on the banks of which it was located—was established and began the manufacture of charcoal iron. So successful was the venture, owing to the fine qualities of the ore that was found within a stone's throw of the furnace, that soon there grew up, among the "old red hills of Georgia" an enterprise which was in those days considered truly one of magnitude. The Hon. Mark A. Cooper, of Cartersville, finally came into possession of the property and made extensive improvements. The "Stamp Creek" furnace was built to supplement the Etowah's output, a rolling mill and forge, 200x900 feet, of pressed brick, was added and three and one-half miles of railroad were built by the Etowah company. A flouring mill five stories high, with a capacity of 250 barrels per diem next was erected, of hewn stone. Buildings for the employees followed until at the time the war broke out there were 1,500 men employed by the Etowah Company. In the midst of what was once a public square, but is now only a dense growth of young timber, stands a white marble shaft upon which one may read this inscription:

THIS MONUMENT IS ERECTED BY
MARK A. COOPER.

Proprietor at Etowah.

As a grateful Tribute to the Friendship and
Liberality of those whose Names are
Hereon Inscribed, which
prompted them to aid
him in the
Prosecution and Development
of the Interests at
ETOWAH.

On the other three sides of the shaft are the names of the members of the Etowah Company, many of whom are still living, and whose names are well known in Georgia.

During the war Mr. Cooper disposed of some of his iron at fifty cents a pound, and finally the Confederate government purchased the plant outright. Then after a few short months Sherman began "marching through Georgia," and it may truthfully be said that he left scarcely one stone upon another, so complete was his destruction of the furnace and all the surrounding buildings. Since the war no one has had the money to build up anew this once prosperous industry, until this summer a number of Atlantians, including Dr. J. W. Rankin, Messrs. L. J. and A. W. Hill, of the Gate City National Bank, J. H. Porter, of the Merchants Bank, C. T. Swift, vice-president of the Swift Specific Co., H. J. Lamar, of the Exchange Bank, Macon, H. J. Lamar, J. of Macon, and Messrs. Aaron and Jacob Haas, O. C. Fuller, T. P. Stovall, A. J. Orme and R. M. Pattillo, organized the "Etowah Iron and Manganese Company," and acquired possession of the entire property, comprising some 17,000 acres in Bartow and Cherokee counties. The principal office of the new association was located in Atlanta, and Dr. Rankin was made president of the company. Steps were taken to develop the property in the best possible manner, and the results achieved in the short time work has been going on are most astonishing even

to one familiar with the many remarkable phases of Southern development that have occurred during the last three or four years. Several of the ore banks formerly worked by Mr. Cooper have been cleaned up so that the ore is exposed; new openings have been made in three or four places, two of them showing ore veins of phenomenal richness, brown hematite, and manganiferous ores, pot ore and grey specular with a percentage of magnetic having been among the latest discoveries.

Before entering into a detailed description of the various ore veins, their trend and general and specific characteristics, it may be as well to give the reader an idea of the area of the Etowah property and some of the advantages it offers in the way of manufacturing, for it is the design of the company to ultimately found, at some convenient spot upon the banks of the majestic river, a mining and manufacturing town. The old railroad bed formerly used by Mr. Cooper, will be re-graded and a track, with "spurs" to connect with the various ore veins, will be built at an early day, the surveyors being now engaged upon the preliminary work. This line of railroad will connect with the "State Road," or Western & Atlantic, at a point near where the W. & A. crosses the Etowah river, about forty-two miles from Atlanta and three miles from Cartersville. Along the line of this branch railroad are several points suitable for the location of a furnace. If the necessary encouragement is received (or an arrangement is made with some competent iron-maker to build a furnace to be operated in connection with the Etowah Iron & Manganese Company's property,) this furnace will soon be built. There is a fine chance to erect here a plant that will yield handsome returns from the first day it is put in blast. In demonstration of this, one has but to say that No. 1 foundry iron fetches \$22 per ton in Atlanta, and can be made at Etowah for \$11 per ton. These are the figures of a man who has been in the iron-making business for more than ten years. Two railroads, one from Chattanooga and Atlanta, and the other from Birmingham, will make the obtaining of cheap coke an easy matter. Another point: the Etowah manganese ores are being shipped, even now, to Pittsburgh, Pennsylvania, and if it is possible to transport the ore that distance and convert it into metal at a profit, it must be equally clear that a furnace on the property, with limestone and other fluxes within easy reach, would yield handsome dividends. The other Etowah ores are also in demand. The 17,000 acres, most of which owned in fee simple by the company, embrace an area of twenty-six square miles, with an expanse of about eight miles North and South and ten miles East and West. The timber is mostly of second growth, pine and oak predominating. An inexhaustible supply of charcoal could be obtained in the event it were desirable to make charcoal iron from the finer grades of ore especially suited for car-wheel iron. The Etowah river, Stamp creek, Allatoona creek, besides a dozen or more smaller streams, pass through the 17,000 acres.

Geologically, the Etowah property is situated in what may, properly, be called the "micaceous carboniferous belt." It follows closely the outlines of the Archæan or Metamorphic and the Silurian formations, and corresponds, in general character, very closely to the carboniferous belt of North Carolina, except that the ores are considerably richer and more abundant, and are found in veins rather than in "pockets" or "beds," the limonites and auriferous gothite, particularly, being in veins of unusual width and evenness. The country is generally quite hilly, but it affords considerable area of rolling arable land, some of which is in cultivation. The eastern portion of the property is situated on an elevated country, or table land, in which the rocks are of a gneissoid character, and it extends from this region over broken terraces of five or six hundred feet, to the Silurian valley on the west. The general trend of the ridges, corresponding to the strike of the rocks, is approximately northeast and southwest. The Etowah river traverses the property, flowing westwardly, and has cut its way through the formations nearly at right angles to this direction, exposing the rocks of these ridges on both sides of its narrow valley in precipitous bluffs that are almost of mountainous proportions. The tributaries of the Etowah conform more nearly to the general strike of the rocks of the country. The two largest of these, Stamp creek, flowing into the river from the north, and Allatoona creek from the south, follow closely the outlines between the Archæan and the Silurian formations.

One of the first indications of rich iron ore deposits the expert sees, in going over

the ground, is the abundance of quartzite, for wherever this mineral exists, the probabilities are that specular iron will be found in abundance. On the extreme eastern portion of the property are found argentiferous galena and zinc blende, carrying a considerable percentage of calcopierite. The abundance of limestone found near the river, (and within one-fourth of a mile of the point at which a furnace would probably be located,) adds greatly to the value of the property, as it can be delivered at the furnace stack at fifty cents per ton.

One very important point deserves more than mere passing mention, and this is the large number of mountain streams that empty into the Etowah river, their débouchure being near the best mill sites along the river. These small streams run so that they can be most advantageously used to wash out the hills and strip the ore veins, thus cheapening the cost of mining very materially, and dispensing with a great deal of expensive machinery, requiring skilled labor in its manipulation. With the use of these never failing streams it is no more than reasonable to suppose that the ore can be mined and delivered upon the cars—by means of chutes—for forty cents a ton; possibly less, certainly not more. Place this price in comparison with what is paid in Michigan, Pennsylvania, Tennessee, Virginia, or even, if you please, in Alabama, and it is evident at a glance the advantage the Etowah iron-maker would have over all competitors, the most fortunate of whom pays as much as sixty cents a ton to get his iron ore on the cars.

An expert's report has been made showing the amount of water-power of the Etowah which runs through the entire property and which, in width, varies from 360 to 700 feet. Within a distance of four miles the stream has a fall of over seventy feet. The total fall in this four miles, if collected at one point, would be, in average depth water, 15,380 horse-power or, in extremely low water, 11,680 horse-power. Of this amount it is calculated fully 8,000 horse power could be collected without difficulty by the construction of five dams, and none of these would interfere with the other by reason of back water. The bed of the stream is of solid rock, and the materials for constructing dams is near at hand, and, literally, "cheap as dirt." As the property develops these sites will offer valuable opportunities for large flouring mills, cotton factories and kindred enterprises, and any manufacturer would doubtless be accorded valuable concessions from the Etowah Company because of their desire to push the development of their property as rapidly as possible. Cotton sufficient to supply two large mills can be bought each year at Cartersville, while Atlanta could supply a dozen more mills, if necessary. Corn and cereals would come by the car load from the territory tributary to the W. & A. R. R. for grinding here, and it certainly seems reasonable that if a 250-barrel-per-day mill would pay at this point forty years ago, it ought to do so now with the increased population, improved local market and labor-saving machinery for fitting up a large flouring mill. Be all this, however, as it may, the fact remains that the Etowah water-power is, indisputably, one of the finest in the entire South, and judging from the liberal and progressive men who are at the helm, the Etowah Iron & Manganese Co. will not be long in securing manufacturers to locate here.

Of the geological formations that are displayed upon this property, the Archæan covers a large part of the eastern section. The rocks consist of crystalline schists, highly micaceous, abounding in quartzite lodes and felspathic gneisses. A broad belt of this latter extends nearly centrally through the property, following the course of Stamp creek, and for some considerable distance, along the Allatoona, both of these streams passing for several miles through the lands of the Etowah Company. The outcrop defines the eastern limit of the iron, manganese and baryta beds, and the western limit of the talc, asbestos, copper and gold veins—these latter are not yet fully developed, but evidence considerable promise. The dip of the strata, with few exceptions, is uniformly toward the southeast.

Reference has been made to the furnaces previously operated in the Etowah section, namely: the Etowah, Stamp Creek and the Allatoona. All the furnaces used, principally, the brown hematite ores that are so abundant hereabout. "These ores," says Mr. J. A. Allison, now superintendent of the iron furnaces at South Pittsburg, Tenn., "are the easiest to smelt I have ever seen in the course of many years' experience. Those from the Wheeler ore bank are convertible into excellent iron with very little trouble

and the minimum of expense." These opinions are fully endorsed by Mr. J. T. Allison, of Atlanta, now engaged as superintendent in charge of the work of developing the property. The "Wheeler," "Cooper" and "Crow" ore veins are almost identical in trend and average width. The "Wheeler" vein is from 20 to 30 feet wide, the ore being limonite—commonly known as brown hematite—and gothite (auriferous). A specimen of this ore, analyzed by Prof. H. C. White, of the University of Georgia, shows the following results:

| | Per cent. |
|--------------------|-----------|
| Metallic iron..... | 61.100 |
| Sulphur..... | .006 |
| Phosphorus..... | .000 |

This was not picked out especially for analysis, and no more than fairly represents the average ore deposit. The "Cooper" vein has been open for many years, the opening being fully a half mile in length and 40 or 50 feet wide, the vein at this point averaging 40 or 50 feet in thickness. This ore, too, is brown hematite, extremely rich and easily worked. When the Hon. Mark A. Cooper purchased the property this vein was first developed by him, and took its name from him. The "Crow" vein is phenomenally rich, and is at least 40 feet wide. The ore is manganiferous and pot ore, and is very accessible. From this vein thousands of tons of the ore have been taken, but millions of tons remain. At the depth of water level the ore will turn to pure manganese—this is the experience throughout the world where the surface characteristics are similar to these. Prof. J. D. Caldon, a mining engineer of 20 odd years' experience is enthusiastic over the brown hematite ores found in the "Wheeler" and "Cooper" shafts, and has found both the botryoidal and stalactitic forms, as well as the associated compact ore. He also thinks the gothite (which is iron hydrate in prismatic crystals as well as fibrous and massive) one of the finest ores he has seen in all his experience in the Southern States.

Manganese ores are principally oxides, carbonates and silicates. The Etowah property is particularly rich in both the oxides and carbonates; in other words, pyrolusite (manganese dioxide) and rhodochrosite (manganese carbonate). These are called manganese ore "for short." On the Etowah property the manganese is found in beds covering some extensive areas both north and south of the river. "The extent of country covered by these deposits," says Prof. A. R. McCutcheon, in a special report, "is shown in some localities by an abundance of surface and drift ore, and in others by a peculiarly reddish brown or chocolate colored soil, which serves as an almost equally sure indication of the underlying ore." Openings have been made on a number of lots, in several displaying large beds of manganese. Some of these, when examined, were of sufficient extent to show with reasonable certainty the thickness of the deposits, and to demonstrate that this is, undoubtedly, the finest mineral property in Georgia if not in the entire South.

In August, 1885, an opening was made and several tons of ore taken out. Though little work had been done, this was sufficient, when considered in connection with surface ores, to indicate the existence of large deposits. A specimen was taken for analysis. The ore is of nodular character and quite crystalline and shows the following analysis:

| | Per cent. |
|---------------------------------|-----------|
| Manganese dioxide..... | 87.900 |
| Oxides of iron and alumina..... | 2.530 |
| Sulphur..... | .006 |
| Phosphorus..... | .000 |
| Silica..... | 8.360 |
| Water and organic matter..... | 1.042 |

The manganese dioxide in this is equal to 54.975 per cent. of metallic manganese.

Pyrolusite is found in many places throughout the 26 square miles comprising this property. At one point an engine and ore washer have been erected and the manganese is being shipped as fast as it can be mined and cleaned up. This ore is highly crystalline and much softer than the general class of ores in this section, though the deepest portion of the deposit—taken from an opening four miles north of Cartersville—exposes some harder ores of the usual nodular character. A specimen of the manganese from what is known as "Lot 391" shows the following analysis:

| | Per Cent. |
|---------------------------------|-----------|
| Manganese dioxide..... | 87.000 |
| Oxides of iron and alumina..... | 9.130 |
| Sulphur..... | .000 |
| Phosphorus..... | .005 |
| Silica..... | 2.175 |
| Water and organic matter..... | 1.015 |

The manganese dioxide in this sample is equivalent to 54.750 per cent. metallic manganese.

At this point where the washing of ore is being done the superintendent is opening a tunnel in the side of the hill to tap the manganese vein; the ore now being taken out is what may properly be called "drift ore." The tunnel has reached a depth of 400 feet, and has now reached the ore vein.

About forty tons per day are handled at the washer just now and the capacity will be increased as soon as practicable. In addition to the pyrolusite and rhodochrosite, Prof. Caldon has found, on the western side of the property, a considerable drift of wad, or bog manganese, together with drift of pyrolusite that has, evidently, been washed west from the main vein. "Bog ore," says Dana, in his "Manual of Mineralogy and Lithology," "is best fitted for castings," and the deposit on the Etowah lands is sufficiently extensive to make it valuable where diversified iron interests are contemplated. As a merchantable article manganese stands well, and ores as rich as these are sure to be always in demand, especially for the manufacture of spiegeleisen, a hard, highly crystallized pig iron containing a large amount of carbon and manganese. There is also found, on Lot 171, an ore containing a large percentage of manganese. This is particularly well adapted for the manufacture of ferro-manganese or "manganiferous iron."

Of course the extent of the manganese deposits on this vast area cannot, as yet, be fully determined, but it has been demonstrated beyond the possibility of cavil that there is enough of it on the Etowah property to last for thousands of years.

We have purposely reserved, for the last, a description of the ore which, in the opinion of every expert who has seen it, is, by all odds, the finest that is found on the property. We refer to the micaceous grey specular which is found throughout a long ridge running at right angles to the river. Several openings have been made and the vein is a very large one. A specular ore containing a large percentage of magnetic is also found with the micaceous-specular. The deeper the vein is worked it is found that the stronger becomes the percentage of magnetic. "This," says Prof. Caldon, "is one of the finest ores I have ever seen in America, in many years' experience, and the further it is developed the better it grows. There is scarcely a trace of phosphorus in it." The ore is found scattered in fragments from the foot of the ridge in which the vein runs to the very top of the hill. The vein has been worked on an adjoining property, and was found to be five feet thick, with some intercalated slate and itacolumite. As this is what is called a "stratified ore," and occurs in a regular bed, it goes without saying that it is continuous throughout the entire length of the ridge in which it outcrops. It can be traced by surface ore wherever the associated itacolumite, quartzite and slate are exposed. "The outcropping," says Prof. McCutcheon, "of the strata between the points at which this ore is found, is generally covered with detritus, a condition common to the country near the Metamorphic range of mountains." An analysis of this specular ore, made by Prof. H. C. White, shows the following results:

| | |
|--------------------|------------------|
| Metallic iron..... | 64.500 per cent. |
| Sulphur..... | .012 " |
| Phosphorus..... | .021 " |

In addition to these iron ores there are found on the property baryta, sienna, calcite, itacolumite, talc and asbestos, gneissite (suitable for building stone), and gold. The baryta is found in several spots and of good quality. The sienna or yellow ochre is abundant, and an ochre mine near the Etowah Company's line has been profitably worked for years. The calcite or limestone is abundant and can be quarried at small cost, while the itacolumite, or flexible sandstone, makes an admirable refractory material for furnace uses and can be quarried cheaply. The white friable sandstone is well suited for use in glass manufacture. The gold veins on the property have not as yet been developed, but the indications point to a free-milling ore or sulphurets that will yield enough gold to make it profitable to work these deposits and erect a small stamp mill on Allatoona creek. In the course of a recent report, submitted to the Board of Directors of the Etowah Iron & Manganese Company, by John M. McCandless, Esq., of Atlanta, the well-known analytical chemist, the following occurs:

"You will doubtless be extremely gratified to note the very low figures for phosphorus in the micaceous-specular and especially in one marked No. 1, in which no phosphorus whatever appears. You will appreciate the importance of this fact when you remember that all the Bessemer steel-making ores practically available, are few in number. In Europe the most important ores of this description are from special localities in Sweden, England and

the Island of Elba, and in this country from the Cornwall ore bank in Eastern Pennsylvania, from the Lake Superior mines and from Missouri, at Iron Mountain and Pilot Knob, near St. Louis. Probably nowhere else in the world can a deposit just such as this be found where ore suitable for making Bessemer pig lies in juxtaposition with the manganese ores from which spiegeleisen and ferro-manganese (essential in the completion of the Bessemer process) may be made. Average analyses of the Lake Superior and Pilot Knob ores show from fifty to sixty-three per cent. of metallic iron and from .06 to .11 per cent. of phosphorus. The Cornwall ore bank of Pennsylvania contains about fifty per cent. of metallic iron and is practically free from phosphorus. It will be thus seen that your micaceous-specular compares favorably with the very best ores of this country."

Following is a synopsis of the analyses made by Prof. McCandless. The veins from which the samples were taken are by this time familiar to the reader. The first, from what is known as "the 616 opening," is a grey specular ore, and shows 83.20 per cent. of iron peroxide, 58.24 per cent. of metallic iron, not even a trace of phosphorus, and 16.20 per cent. of silica and insolubles.

The second sample, from the old "Cooper" vein, is specular and brown hematite mixed. This shows 62.24 per cent. of iron peroxide, 43.56 per cent. of metallic iron, .175 per cent. phosphorus, and 34.52 per cent. silica and insolubles. This is the ore that was worked so profitably before the war.

The third specimen is a specular hematite, taken from lot 303 and shows 85.18 per cent. iron peroxide, 59.62 per cent. metallic iron, .119 per cent. phosphorus and 13.50 per cent. silica and insolubles.

A sample of limonite from Hurricane mountain shows 90.32 per cent. iron peroxide, 56.22 metallic iron, .315 per cent. phosphorus and 5.95 per cent. silica and cetera.

Of the manganese ores there were several assays made, three average analyses being given herewith. The first from "lot 303" yields oxides of manganese equivalent to 53.85 per cent. of metallic manganese, with .175 per cent. of phosphorus and 5.50 per cent. silica and insoluble. Several other samples from the openings made near where the washer is now at work, and on the river north of Cartersville, from which manganese for exhibition at the Piedmont Exposition is now being shipped, yielded respectively 50.95, 50.04 and 45.75 per cent. of metallic manganese, the traces of sulphur being respectively .070, .056 and .176. It would, indeed, be difficult to find much richer ore than this, as the samples gathered for assay were "fair average," and not selected with a view to obtaining misleading statistics. The small percentage of phosphorus in the ore renders it the most valuable for Bessemer purposes that has yet been found in America, and there must always be a market for the products of these mines so long as Bessemer steel remains at its present prices.

It would be impossible to include, within the scope of such a necessarily brief article, any detailed category of the many and varied industries that could, profitably, be inaugurated upon the Etowah property. If the Etowah Iron & Manganese Company shall be successful in accomplishing the building of a furnace it will be only a question of time when the other manufacturing enterprises will follow. The magnificent water-power will, doubtless, soon be utilized by enterprising capitalists who, through the co-operation of the Etowah Company, will be in position to make money from the start, and it is not difficult to see that, as soon as the fact is made public that these mill sites are in the market, there will be plenty of applicants. It is expensive to build an iron furnace, but the directors have in contemplation a plan by which some furnace man of experience can probably be induced to join the enterprise and put up a modern-equipped plant, the Etowah Company furnishing the ores and site for the furnace, and, if necessary, subscribing for a portion of the stock of the furnace company. The exhibit that the Etowah Iron & Manganese Company will make at the Piedmont Exposition, under the direction of Prof. Caldon, will attract considerable attention, as a large quantity of each of the ores will be exhibited and the wonderful diversity of this property's wealth will be made the more manifest thereby. It is greatly to be hoped that the attention of outside capital will be attracted to this exhibit and that it may result in an affiliation which will render possible, at an early day, the building of a large furnace at Etowah.

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Practical Illustrations

Practical illustrations of the wonderful changes that are going on in the South and the remarkable increase in railroad and manufacturing interests could be multiplied without number. A most excellent one is found in the case of Sheffield. Four years ago Sheffield was a corn field, and, when it was proposed to found an industrial city there, its projectors were by some regarded as visionary or as speculators seeking to entrap the unwary. Of the five furnaces, the compress, the agricultural implement works, the paint factory, the big hotel, the business blocks and other things we have already given particulars. We simply refer now to Sheffield to say that, although its present site was a corn field four years ago, there are to-day twelve railroads, either running to that point or chartered to build there, and that fully that number seems assured in the near future, as the Sheffield Enterprise, in its last issue, says:

"For the projected roads charters have been obtained, routes surveyed and in all but one or two cases the roads located, and the funds guaranteed; so that there is every reasonable prospect that on the larger majority of them, the work of active construction will be well under way before the close of another twelfth month. Sheffield has already reached that point of commercial importance that forbids the thought of her being ignored by any roads coming within her territory."

That is a pretty good showing for a four-year old town.

In "The Model City of the South," otherwise known as Anniston, illustrations of Southern progress could be given almost without number. Take one for instance as showing how rapidly the South is beginning to turn its crude iron into finished products, such as machinery, iron pipe, agricultural implements, &c. Two immense coke furnaces of 150 tons daily capacity each are under construction at Anniston. A few years ago it would have been necessary to secure the ponderous machinery for such gigantic works in the North or West. Now this machinery is being made at home in one of Anniston's machine and boiler works. Over thirty men have been steadily employed on this machinery for four months, and yet it is not half done. Mr. James Noble, of the boiler works, gives the following particulars of the immense machinery that his works are making for these furnaces: "There will be," he says, "two furnace shells seventy-five feet in length and twenty-three feet in diameter; one draught stack sixteen feet in diameter and one hundred and sixty-five feet high; eighteen boilers forty-two inches in diameter and seventy feet long; eighteen boilers thirty-two inches in diameter and fifty-one feet long. These boilers, thirty-six in number, will be made of the best steel. About thirty of them are already completed. There will be about a half mile of gas flues and gas piping of various sizes, some of which will be eight feet in diameter."

Anniston, moreover, while building these gigantic furnaces, is also building the largest iron pipe works in the United States if not in the world. Nine hundred hands will be employed

in these pipe works alone. The pig iron as it comes from the furnaces will be run on small cars down a slight grade to the pipe works, a distance of one or two hundred yards, and with every detail for the most perfect labor saving machinery, perfected, the advantage of these works in turning pig iron into pipe can readily be seen. Then an immense steel bloomery is just getting under way to consume still more of Anniston's pig iron. And, besides, there are immense car wheel and axle works, a great rolling mill and foundries, so that Anniston splendidly illustrates in its own great industrial life, the wide diversity, and thus the safe and solid foundation of the South's wonderful advance in manufactures.

Blessed with inexhaustible stores of raw materials, the South is not content to ship its rough lumber, its pig iron and its cotton to the North and then buy it back in its finished shape, paying freights both ways and the profit of the Northern manufacturer. It proposes to take its ore and turn it into pig iron, and out of this to make its own machinery, hardware, stoves and in connection with its lumber, agricultural implements, etc. Moreover, it will soon conclude to make its own steel rails. It has one Bessemer rail plant now, and it is certain to have more long before they are expected. It is now building its own iron bridges, three great bridge works in cities not far distant from each other, Atlanta, Birmingham and Decatur, all finding profitable employment and much of it, in constructing iron bridges. A few weeks ago we told of Decatur's new bridge works organized but a few months ago, and yet already having contracts on hand for eight bridges, one to cost \$200,000.

The growth of the South so marvelously in many respects as to almost pass comprehension is excellently typified in the history of Decatur since January 1, 1887. It was then to all appearances a dead town, and despite the advantages of its location it gave no sign of ever awakening from its long sleep. That, be it remembered, was only about eight months ago. In that place there are now these great bridge works, an immense machine and steam pump plant, furnaces, electric lights, what is said to be the largest bark extract works in the world, and a number of other enterprises, while railroad machine shops to cost nearly half a million dollars, a mammoth hotel, 680x325 feet, to cost \$300,000 or \$400,000, extensive business houses and dwellings by the score are under construction, and so wonderful is the growth of this place, which eight months ago was a dead country town, that its people are now boasting that it will even surpass Birmingham and become the greatest industrial center in Alabama. And as Decatur waked from its sleep and stepped forward to the stirring music of the South's forward march, so are the other old towns, and, in fact, the whole South, shaking off the lethargy of the past, pressing on determined to utilize to the utmost the great advantages with which nature has so lavishly blessed this sunny Southland, "creation's garden spot."

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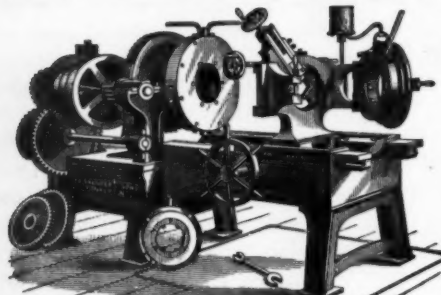
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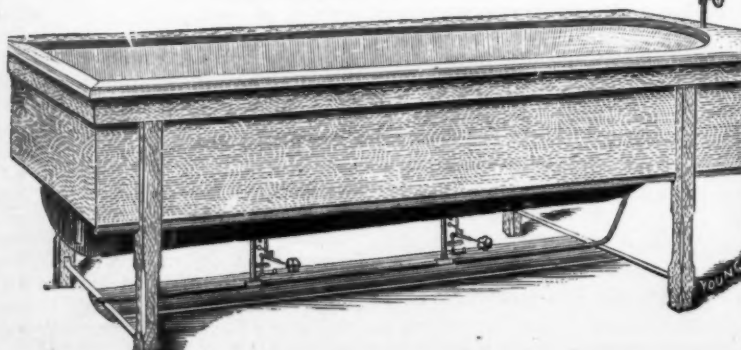
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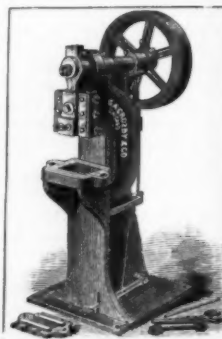
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J. H. WILLIAMS & CO., Drop Forgings,
16 BOWNE STREET, BROOKLYN, N. Y.

Brock's Pat. Drop Forged Chain Pipe Wrench.
The only all-steel Chain Pipe Wrench in the market. The only reversible and interchangeable Chain Pipe Wrench. Six Sizes.

The STANDARD TOOL CO.
—Cleveland, Ohio,—
MANUFACTURERS OF
INCREASE TWIST DRILLS, Etc.,
TAPER SHANK DRILLS,
Straight Shank Drills,
MACHINE BIT DRILLS,
Bit Stock Drills,
SOCKETS,
Hand and Shot REAMERS,
Standard Gauges,
Milling Cutters
and Special Tools,
MORSE TAPER REAMERS,
—Standard Patent—
TWIST DRILL GRINDING MACHINE
New York Office, 33 Chambers St.

Look Carefully through this paper and you may find an advertisement of some machinery or other goods that you are in need of. Preserve this copy for future reference.

Phillips, with Angers..... 7.00 7.50..... net

BRACKETS.
Shelf, plain..... dis 50¢
Shelf, fancy..... dis 50¢

BRIGHT WIRE GOODS.
New list..... dis 75¢

BULL RINGS.
Union Nut Co..... dis 55¢
Sargent's..... dis 60¢
Humason, Beckley & Co's..... dis 70¢

BUTTS.
Wrought Brass..... dis 80¢
Cast Brass, Fast Joint..... dis 35¢
Cast Brass, Loose Joint..... dis 35¢
Fast Joint, Narrow..... dis 60¢
Fast Joint, Broad..... dis 60¢
Loose Joint..... dis 60¢
Loose Joint, Japanese..... dis 60¢
Loose Joint, Jap. w/ Acorn..... dis 60¢
Parliament Butts..... dis 60¢
Loye's Hinges..... dis 60¢
Loose Pin, no Acorn..... dis 60¢
Loose Pin, Acorn..... dis 60¢
Loose Pin, Acorn, Japanese..... dis 60¢
Loose Pin, Acorn, Jap'd, Flanged..... dis 70¢

Wrought Iron.
Fast Joint, Narrow..... dis 70¢
Fast Joint, Lt. Narrow..... dis 70¢
Fast Joint, Broad..... dis 70¢
Loose Joint, Broad..... dis 70¢
Table Butts, Back Flange, &c..... dis 70¢
Inside Blind, Regular..... dis 70¢
Inside Blind, Light..... dis 70¢
Loose Pin, Wrt..... dis 70¢
Loose Pin, Light..... dis 70¢
Spring Hinges—
Geor's Spring and Blank Butts..... dis 30¢
Hart Manufacturing Co..... dis 60¢
American Spring Hinge Co's..... dis 25¢
Gem Spring Hinges..... dis 25¢
Blind Butts, Shepard's, No. 50 and 60..... dis 70¢
Blind Butts, Shepard's, No. 50..... dis 70¢
Blind Butts, No. 75..... dis 70¢
Blind Butts, Lull & Porter..... dis 70¢
Blind Butts, Huffer..... dis 70¢
Blind Butts, Standard..... dis 70¢
Standard Lull & Porter..... dis 70¢

HOW PINS.
Humason, Beckley & Co's..... dis 55¢
Sargent & Co's..... \$19.70 and \$1.00 dis 60¢
Hochkiss..... dis 25¢

BUTCHER'S CLAVES.
Humason & Beckley Mfg. Co..... dis 25¢
Bradley's..... dis 25¢
Beatty..... dis 40¢

CAN OPENERS.
American..... \$1.00 gross \$1.20
New Idea..... \$1.00 gross
No. 4, French..... \$1.00 gross, dis 55¢
No. 1, Iron Handle..... \$1.00 gross, dis 55¢
Sardine Cutters..... \$1.00 gross, dis 55¢
Sprague, No. 1, \$1.00; No. 2, \$1.00; No. 3, \$1.00; dis 55¢
Universal..... \$1.00 gross, dis 55¢

CAPE, PERCUSSION, \$1.00.
U. M. C., F. C. trimmed..... \$1.00
U. M. C., F. L. ground..... \$1.00
U. M. C., Cen. fire ground..... \$1.00
U. M. C., Double W. Proof..... \$1.00
G. D. & S. B..... \$1.00
E. B. 2-10, Eley's..... \$1.00
Market, in 2-10's..... \$1.00
Hicks Ground Edge in Brass Boxes..... \$1.00

CARTRIDGES.
Rim..... dis 60¢
Central Fire, pistol size..... dis 40¢
" " Military..... dis 40¢
B. B. Caps, Round Balls..... \$1.00
" Swaged Conical..... \$1.00

NEW LIST ON CARTRIDGES.
Rim-fire, 20 short..... \$1.00
" 30 "..... \$1.00
" 32 "..... \$1.00
" 38 "..... \$1.00
Central Fire—30, \$1.00; 38, \$1.00; 40, \$1.00; 44, \$1.00.

CARBS.
Horse and Curry..... dis 20¢
Cotton, new list, Aug, 1893..... dis 20¢
Wool, new list, Aug, 1893..... dis 20¢

CARPET STRETCHERS.
Cast Steel, Polished..... \$1.00 gross, dis 50¢
Cast Iron, Steel Points..... \$1.00 gross, dis 50¢
Bullard's..... dis 25¢

"ASTERS.
Bed..... dis 55¢
Plate and Shallow Socket..... dis 55¢
Deep Socket..... dis 40¢
Martin's Patent (Phoenix)..... dis 45¢

CATTLE LEADERS.
Humason, Beckley & Co's..... dis 75¢
Sargent's..... dis 70¢
B. & W..... dis 50¢

CHAINS.
German Halter and coil Chain..... dis 60¢
Trace, Breast and Fancy..... dis 50¢
Oxside Halter Chain (old list)..... dis 45¢
Galvanized Pump Chain..... \$1.00 net
Jack Chain, Iron..... dis 75¢
Jack Chain, Brass..... dis 75¢

CHALK.
White..... gross 55¢ net
Red..... gross 75¢ net
Blue..... gross 100¢ net
White Crayons..... gross 130¢ net

COTTON LINES.
Cotton Fish Lines, 20 feet..... dis 40¢
Cotton Chalk Lines, 20 feet:
No. 0..... 1..... 2..... 3..... 4..... 5..... 6..... 7..... 8..... 9..... 10.....
6.00..... 6.50..... 7.00..... 7.50..... 8.00..... 8.50..... 9.00..... 9.50..... 10.00..... 10.50.....

CHISELS.
Socket Framing, Crossman..... dis 65¢
Socket Firmer, Crossman..... dis 65¢
Socket Framing & Firmer..... No. 1, Extra, 75¢
Socket, Douglas..... 75¢
Socket, Ohio Tool Co..... 75¢
Socket, Peck, Stone & Wilcox..... 75¢
Socket, Corner..... 75¢
Tanged Firmers, Douglas..... dis 40¢
Tanged Firmers, Butler's..... dis 40¢
Merrill's Socket and Framing Chisel..... dis 60¢

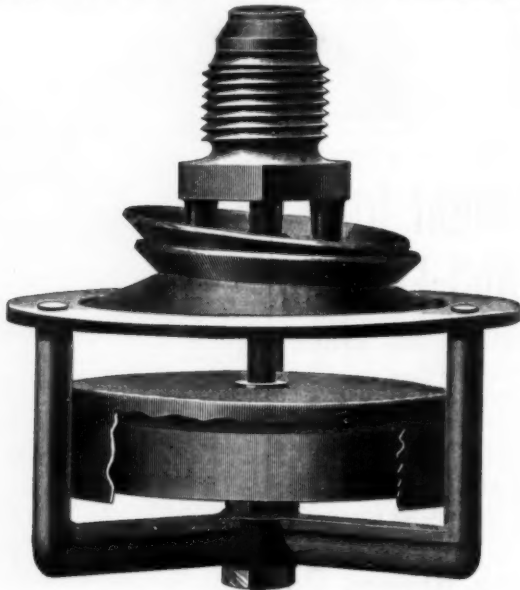
CLAMPS.
Iron, Screw, Eagle..... dis 50¢
Iron, Adjustable, Stearns..... dis 50¢
Iron, Cabinet, Sargent's..... dis 50¢
Iron, Carriage maker's, Carr & Crawley..... dis 50¢

CLIPS, AXLS.
Norway or Best..... dis 60¢
Superior..... dis 60¢
Conestoga..... dis 60¢
Coal Hods—Griffiths..... dis 40¢

COCKS, WHEELS.
Racking, new list..... dis 55¢
Globe, new list..... dis 55¢
Plain Wheel..... dis 55¢
4 in and over, new list..... dis 55¢

Automatic Sprinklers.

The main object of automatic sprinklers is to put out fires in their incipient stages, when there may be no one at hand to use other protecting apparatus. Sprinklers heretofore made and now in use have, so far as we know, depended on a metallic joint, fusible at a certain heat, as a means of accomplishing this object. Most of them have been so constructed that the pressure of the water constantly tends to force the valve



THE DRAPER AUTOMATIC SPRINKLER.

open and cause them to leak. On this account any blow from a broom in sweeping down, or other accidental blow, which disarranges their more delicate parts, often causes them to leak, and thus make serious trouble.

The Draper Automatic Sprinkler herewith illustrated does not depend on fusible metal to open. The expansion of a fluid, when subjected to a certain degree of heat, opens the valve against the pressure of the water in the pipe. From this it will be seen that it is necessary to exert a greater direct pressure than the water pressure in the pipes to

in the cut. When in its normal condition the pressure of water on the valve seat keeps it closed. When sufficient heat to open it is generated the fluid chamber is expanded, forcing the valve open against the pressure of the water in the pipes, and sprinkling, as the ordinary sprinkler does, a certain space around it. When it has accomplished its purpose and put out the fire, it is only necessary for the watchman, or any other ordinary hand duly instructed, to take a screw-driver, or any other ordinary implement, and, by

forcing back the catch, release the valve, so that it instantly closes and is immediately ready for another fire without further preparation.

The sprinkler head when closed, as stated, is again ready for operation as soon as the required amount of heat is generated around it. The pressure of the fluid in the chamber is sufficient to hold the valve open with the weight of an ordinary man on it while a sufficient degree of heat is maintained to keep the chamber expanded, and a pressure of two or three pounds is sufficient to close it when the temperature is reduced. The pres-

sure exerted by the water on a half-inch valve at 200 pounds pressure per inch is a little less than 40 pounds; so it will be seen that at a much higher than normal fire pressure the sprinkler is certain in its operation. The manufacturers claim that its great advantage over other sprinklers lies in the fact that it is operative at a much lower temperature than any sprinkler depending upon fusible metal.

It is a fact that small fires starting on or near the floor of an ordinarily constructed building made from 11 feet to 14 feet be-

tween floors will get considerable headway before the temperature at the top of the room where the sprinkler head is situated will rise from a normal degree of heat of 70 to 90 degrees Fahrenheit to 180 degrees Fahrenheit, and it is very evident that the temperature will be raised from normal to 140 degrees Fahrenheit much quicker than it will to 180 degrees Fahrenheit, and of course the fire would have much less headway when the sprinkler opens. From this it will be seen that this sprinkler, requiring a much smaller amount of fire to open it, will of necessity act more quickly, and before the fire has reached alarming proportions.

The chamber containing the volatile liquid is so protected that it cannot be cooled by any flow of water from an adjacent sprinkler, so that in case a fire spreads under the heads there is no danger of the operation of one preventing its neighbors from doing their duty. The liquid is hermetically sealed in a metal case, and is indestructible and changeless in its conditions.

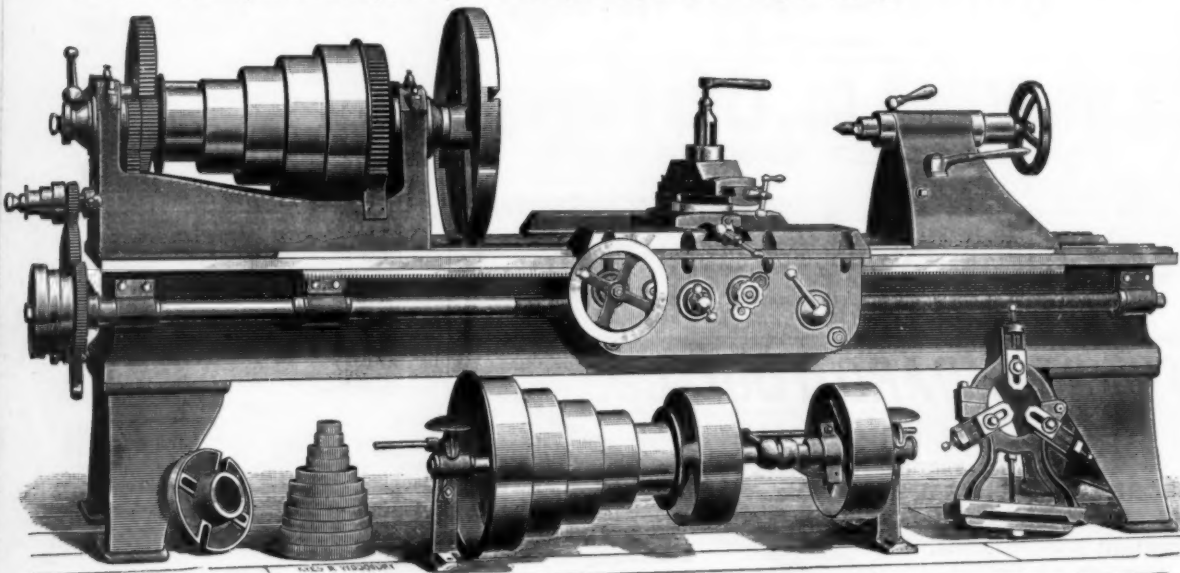
Further information can be obtained from the manufacturers, Messrs. George Draper & Sons, Hopedale, Mass.

A New Engine Lathe.

Fraser & Archer, 121 Chambers street, New York, have just placed in stock a new engine lathe recently brought out by Fay & Scott, of Dexter, Me. These lathes are made in two sizes, and are of heavy pattern and improved design, with the parts arranged for rapid and efficient work.

The one shown in this connection has a 12-foot bed, 28-inch swing and weighs 5,000 pounds. It is very strongly back geared, has longitudinal and forcing feed by splined screw and belt, with independent screw cutting feed and compound rest indexed. The steel spindle is four inches in diameter; front bearing 7 inches long; tail spindle 2½ inches diameter. The largest diameter of cone is 18 inches for 4-inch belt, and has five changes of speed. The friction pulleys or countershaft are 14 inches diameter.

The carriage has double apron, with long bearings to each end of shaft, and has sufficient cross feed to square the full swing of lathe, with one setting of the tool. There are also full changes of gearing for screw cutting.



NEW ENGINE LATHE.

cause this sprinkler to leak; and it cannot leak from the water pressure in the pipes, because the greater the pressure the tighter the valve will be held to its seat; nor can any accidental blow of any kind cause it to leak.

This fluid, which by its expansion expands the case and so opens the valve, can be so proportioned as to be operative at as low a temperature as 120 degrees Fahrenheit, and, as proportioned, will do so at about 140 degrees Fahrenheit.

The construction of the sprinkler is shown

sure exerted by the water on a half-inch valve at 200 pounds pressure per inch is a little less than 40 pounds; so it will be seen that at a much higher than normal fire pressure the sprinkler is certain in its operation.

The manufacturers claim that its great advantage over other sprinklers lies in the fact that it is operative at a much lower temperature than any sprinkler depending upon fusible metal.

It is a fact that small fires starting on or near the floor of an ordinarily constructed building made from 11 feet to 14 feet be-

THE BALTIMORE MANUFACTURERS' RECORD is doing a grand work for the upbuilding of the Southern States in collecting, collating and publishing reliable statistical data about their magnificent resources and industrial accomplishments and possibilities.—Virginia, Lynchburg, Va.

REYNOLDS & BARKER, of Bristol, Tenn., have bought the Goodell & Smith Foundry, and desire to interest a practical man with them. A good business already established.

THE MARKETS.

OFFICE MANUFACTURERS' RECORD, }
BALTIMORE, Oct. 5, 1887.

There is some complaint of the scarcity of money, but business generally is in a very prosperous condition. Throughout the South trade is healthy and manufacturers are crowded with orders, many of them being sold well ahead of production. As shown elsewhere in to-day's MANUFACTURERS' RECORD, Southern cotton mills are doing exceedingly well and paying large dividends, while many new mills are under construction.

In manufactured iron there is no change, the demand continuing about the same at former prices, viz:

| | |
|--------------------------------------|----------------|
| Ref. Bar Iron, 1 to 2½ to 1..... | \$ 2.10@ 2.40c |
| " " " 1 to 4½ to 1..... | " 2.10@ 2.40c |
| " " " ½ to 2, round and | " |
| square..... | " 2.10@ 2.40c |
| Hoop Iron, 1½ wide and upward.... | " 2.50@ 3 c |
| Band Iron, from 1½ to 6 in. wide.... | " 2.40@ 3½c |
| Horseshoe Iron..... | " 3 @ 3½c |
| Norway Nail Rods..... | " 1½ @ 3½c |
| Black Diamond Cast Steel..... | " 1 @ 9 c |
| Machinery Steel..... | " 3 @ 4½c |
| Spring Steel..... | " 3½ @ 4 c |
| Common Horse Nails..... | " 8 @ 9 c |
| Railroad Spikes, 3½x9-16..... | " 2½ @ 3 c |
| Steel Boiler Plate..... | " 2½ @ 4 c |
| Iron Boiler Plate..... | " 2½ @ 4 c |
| Boiler Tubes..... | 50¢ off list |

The production and consumption of pig iron continue very heavy, with prices as last quoted, viz:

| | |
|--|---------------|
| Baltimore Charcoal Wheel Iron (all | |
| Baltimore ore)..... | \$28 00@29 00 |
| Virginia C. B. Charcoal Wheel Iron.... | 27 00@29 00 |
| Anthraxite, No. 1..... | 20 00@22 00 |
| " " "..... | 18 00@20 00 |
| " " "..... | 16 00@18 00 |
| " " "..... | 14 00@15 00 |
| Mottled and White..... | 22 50@24 00 |
| Old Rails..... | 22 00@23 00 |
| Old Steel Rails..... | 21 00@22 00 |
| No. 2 Wrought Scrap..... | 21 00@22 50 |
| Old Car Wheels..... | 18 00@19 50 |

HARDWARE.

The volume of business continues satisfactory and values remain generally unchanged. Thus far the trade of the year has been in excess of former years, but in the matter of profit there is great and general complaint. Outside of leading staples most of the items of hardware have always paid a fair margin, but our system of soliciting business, together with the increasing knowledge of both dealers and consumers as to actual costs have had their long predicted effect and from a conservative, profitable branch of trade it is said that there is probably no business engaging the intelligent employment of capital and labor which yields the small returns as the jobbing of hardware.

Philadelphia Iron Market.

PHILADELPHIA, Oct. 4, 1887.

The general situation in the iron trade in Eastern Pennsylvania is substantially what it was a week ago. There is no rush for material, no accumulation of stocks no change in price, and no change in opinion as to what the future is likely to be. Consumers of good foundry iron are always around picking up bargains at the best terms they can obtain. No. 2 iron has been sold for a few weeks quite lively at about \$19 to \$19.50. The heavy demand for forge iron at mills is keeping up prices at \$17 to \$17.50. American Bessemer is sold at \$19.50 at furnaces, but there are large offers in at \$19.00, which will likely be accepted. The bar mills throughout the State are very busy, and refined iron is run at from 2c. to 2 10c., with occasional cuts on account of competition from the West. Nails are moving steadily, although there is much dissatisfaction over production and prices. Plate iron is sold freely; in fact, the entire mill capacity of the city and surrounding country is fully absorbed. Steel rails have dropped to \$35; old rails are sold at \$22 to \$22.50. Railroad builders are a little backward about placing heavy orders for next year. First, on account of the possibility of stringency of money; secondly, on account of the possibility of not very much railway building; and

thirdly, on account of the possibility of further decline in prices. The price changing from \$38 to \$36 was a surprise, but the decline from \$36 to \$35, which has just taken place, was not unexpected. Rail makers say they are making nothing whatever, but have no alternative in the matter. The general situation is very encouraging, and a large amount of business is being done. Our commercial relations with the South are growing more intimate and friendly. The rail makers meet on the 13th and the rail makers on the same day at New York City. Building activity is still reported in all directions.

Cincinnati Iron Market Report.

Specially reported by ROGERS, BROWN & Co., Pig Iron Commission.

CINCINNATI, October 3, 1887.

Various reasons combine to continue the feeling of hesitation so frequently noted in the past two months. The talk of tight money, while in part unfounded, has made buyers cautious. Reports of failures have had the same effect. The fact that more iron is being made than ever before also creates timidity. The result is that orders placed continue to be for small amounts, and the aggregate is unquestionably below the rate of consumption. Many of the larger foundries are drawing upon old contracts, and buying only to even up. Stocks in consumers' hands have not been so light certainly for a year past. All this seems to point plainly to an increased demand a little later. This demand will find the lowest stocks in first hands ever known since authentic records were kept, and sellers argue from this that if there is any change in prices it will be towards greater firmness. On the whole, a good business has been done the past week at the same range of values last quoted, and the tone of the market in all respects is unchanged. We quote for cash f. o. b. Cincinnati:

HOT-BLAST FOUNDRY.

| | |
|---|-------------------------|
| Ohio and Southern Strong Coke No. 1. | \$1.00 @ \$1.50 |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| Ohio Soft Stonecoal, No. 1. | \$1.00 @ \$1.50 |
| Ohio Soft Stonecoal, No. 2. | \$1.00 @ \$1.50 |
| Mahoning and Shenango Valley Coke, No. 1. | \$1.00 @ \$1.50 |
| Hanging Rock Charcoal No. 1. | \$1.00 @ \$1.50 |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| Tennessee & Alabama Charcoal No. 1. | \$1.00 @ \$1.50 |
| " " " " " " " " " " " " | " " " " " " " " " " " " |

FORGE.

| | |
|---------------------------------|-------------------------|
| Strong Neutral Coke. | \$1.00 @ \$1.50 |
| Mottled " " " " " " " " " " " " | " " " " " " " " " " " " |
| Cold Shortlings. | \$1.00 @ \$1.50 |

CAR WHEEL AND MALLEABLE.

| | |
|---------------------------------|-----------------|
| Southern Car-Wheel Iron. | \$1.00 @ \$1.50 |
| Hanging Rock Cold Blast, No. 1. | \$1.00 @ \$1.50 |
| Hanging Rock Cold Blast, No. 2. | \$1.00 @ \$1.50 |
| Lake Superior Malleable. | \$1.00 @ \$1.50 |

Chicago Iron Market.

Specially reported by ROGERS, BROWN & Co. W. W. BACKMAN, Resident Agent.

CHICAGO, Oct. 3, 1887.

Orders are still hand-to-mouth in character, and a great many of them. Agents and dealers complain that buyers delay purchases until iron is actually needed and then place orders for quick shipment from distant markets. The great scarcity of cars and complete absence of stocks on hand at the furnaces render prompt execution of these orders difficult and almost impossible. Confusion and complaint are the result. There seems to be no change, however, in the policy of buying for immediate needs only. Bessemer iron is again in request and firm in prices. Pressure to dispose of Lake Superior charcoal iron direct to consumers before close of navigation leads to some shading in prices, but the beginning of winter will find much less of this iron in stock at Chicago and at furnaces accessible by rail than ever before, and higher prices are expected later. Old rails are for the moment in better supply, but are firm at \$24.50 to \$25.00. The supply of this material is diminishing, and must soon cease to be an important factor in the market. Five hundred tons of old wheels were sold at \$21.00,

cash Chicago. Soft irons are as scarce and firm as ever. We quote for cash f. o. b. cars Chicago:

COKE AND STONE COAL FOUNDRY.

| | |
|--------------------------------------|-------------------------|
| Ohio (Hanging Rock) Softeners No. 1. | \$1.00 @ \$1.50 |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| " " " " " " " " " " " " | " " " " " " " " " " " " |

CHARCOAL FOUNDRY.

| | |
|----------------|-----------------|
| Lake Superior. | \$1.00 @ \$1.50 |
| Southern. | \$1.00 @ \$1.50 |
| Hanging Rock. | \$1.00 @ \$1.50 |

CAR WHEEL AND MALLEABLE.

| | |
|---------------------------|-------------------------|
| Lake Superior. | \$1.00 @ \$1.50 |
| Standard Southern. | \$1.00 @ \$1.50 |
| Hanging Rock, cold blast. | \$1.00 @ \$1.50 |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| " " " " " " " " " " " " | " " " " " " " " " " " " |

OLD MATERIALS.

| | |
|---------------------|-----------------|
| Old Rail, American. | \$1.00 @ \$1.50 |
| Old Wheels. | \$1.00 @ \$1.50 |

Louisville Iron Market.

Specially reported by Gso, H. HULL & Co., Commission Merchants for the sale of Hot and Cold Blast Pig Iron.

LOUISVILLE, KY., Oct. 3, 1887.

Sales at Louisville during the past week have decreased somewhat. Stock at furnaces still low, furnaces making choice brands being sold ahead, and some of them out of blast for repairs or lack of coke, and a number of important orders not booked; furnaces unable to fill. Prices substantially unchanged. We quote for cash in round lots as follows:

PIG IRON.

| | |
|--------------------------------------|-------------------------|
| Southern Coke, No. 1 Foundry. | \$1.00 @ \$1.50 |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| Hanging Rock Coke, No. 1 Foundry. | \$1.00 @ \$1.50 |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| Southern Charcoal, No. 1 Foundry. | \$1.00 @ \$1.50 |
| Silver Gray, different grades. | \$1.00 @ \$1.50 |
| Southern Coke, No. 1 Mill, Neutral. | \$1.00 @ \$1.50 |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| Southern Charcoal, No. 1 Mill. | \$1.00 @ \$1.50 |
| White and Mottled, different grades. | \$1.00 @ \$1.50 |
| Southern Car Wheel standard brands. | \$1.00 @ \$1.50 |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| Hanging Rock Cold Blast. | \$1.00 @ \$1.50 |
| " " " " " " " " " " " " | " " " " " " " " " " " " |
| " " " " " " " " " " " " | " " " " " " " " " " " " |

St. Louis Iron Market.

Specially reported by ROGERS, BROWN & Co., Gay Building, 204 N. 3rd street, St. Louis. W. H. SHIELDS, Manager.

ST. LOUIS, Oct. 3, 1887.

There has been a better inquiry the past week and more orders were booked than during the week previous. The temper of the market, however, is unchanged. Good foundry irons are hard to get for prompt delivery, and buyers in some cases are giving up the expectations of lower prices on account of a glut in the market. Business has been demoralized the past week by reason of the great gathering of veterans. The railroad and transfer companies have been unable to take care of freight as usual and some inconvenience has resulted. We make no change in last week's quotations.

ALWAYS ASK FOR
ESTERBROOK'S
CELEBRATED
STEEL PENS.

PENS

LEADING NUMBERS:

048, 14, 130, 333, 185, 161

For Sale by all Stationers.

The Esterbrook Steel Pen Co.

26 John Street, New York

SHURTZ BEKING
MANUFACTURERS OF
OUR BELTING
is tanned on the surfaces
only; the
INTERIOR is RAW HIDE.
Send for Our Valuable Book for Engineers and Belt Users. Free.
Agents in all Cities. Send for Trial Belt.
Address SHURTZ BEKING CO., St. Louis, Mo.

All expect a good fall and winter business. We quote:

| | |
|---------------|-----------------|
| MISSOURI..... | \$1.00 @ \$1.50 |
| Southern..... | \$1.00 @ \$1.50 |

COKE AND COAL.

| | |
|---------------------|-----------------|
| Southern No. 1..... | \$1.00 @ \$1.50 |
| Southern No. 2..... | \$1.00 @ \$1.50 |
| Ohio Softeners..... | \$1.00 @ \$1.50 |

MILL IRONS.

| | |
|---------------------|-----------------|
| Missouri..... | \$1.00 @ \$1.50 |
| Southern No. 1..... | \$1.00 @ \$1.50 |
| Southern No. 2..... | \$1.00 @ \$1.50 |

CAR WHEEL AND MALLEABLE IRON.

| | |
|--------------------|-----------------|
| Southern..... | \$1.00 @ \$1.50 |
| Lake Superior..... | \$1.00 @ \$1.50 |

SCRP, &c.

| | |
|-----------------------------------|-----------------|
| Old rails..... | \$1.00 @ \$1.50 |
| Old wheels..... | \$1.00 @ \$1.50 |
| Connellsville Coke (Frick's)..... | \$1.00 @ \$1.50 |

ATTENTION is invited to the advertisement of Mr. E. B. Moon, of Bristol, Tenn., who offers for sale 400,000,000 feet of timber, including 150,000,000 feet of white pine, 30,000,000 feet of poplar, 200,000,000 feet of hemlock, and 10,000,000 feet of white oak. This timber is located in a rapidly-developing section, and is well worth the investigation of buyers.

MILLER, BLANTON & OATS, of Shelby, N. C., advertise in this issue for a superintendent for a new cotton mill of 3,000 spindles.

THE Bristol Land Improvement Co., Bristol, Tenn., control for sale large tracts of timber land in Watauga county, N. C., and some of the finest magnetic iron properties in Ashe county, N. C.

FOR boiler fronts there is nothing equal to Dixon's Silica-Graphite Paint. It is a beautiful black, and will not burn off. Boiler fronts painted three years ago are as good to-day as when painted. Address Jos. Dixon Crucible Co., Jersey City, N. J. †

WANTED AT ONCE.

A live, energetic, progressive, temperate man as superintendent of a new Cotton Mill with 3,000 spindles, making warps. Must understand the business, knowing also how to adjust machinery. No K. of L. need apply.

MILLER, BLANTON & OATES,
SHELBY, N. C.

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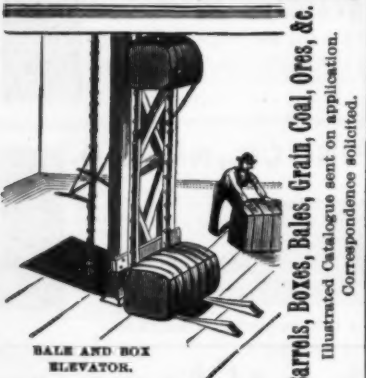
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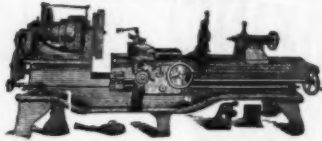
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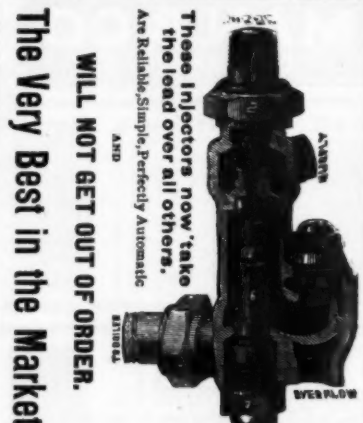
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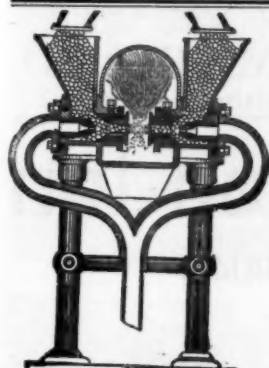
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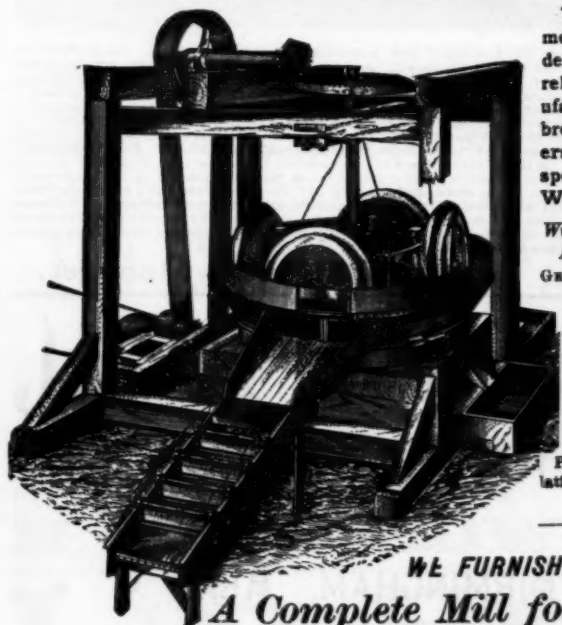


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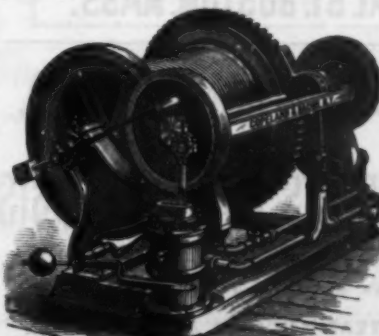
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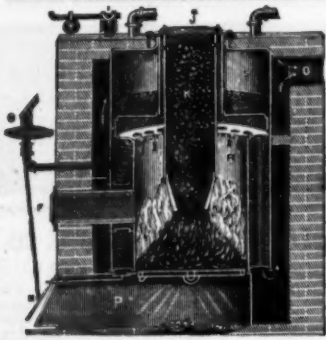


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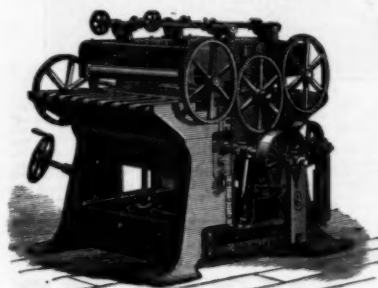
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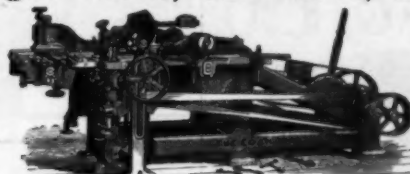
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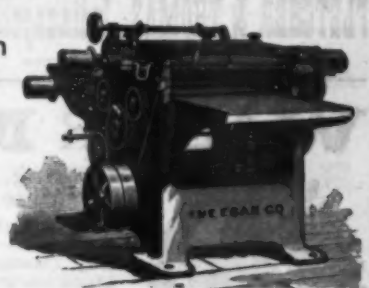


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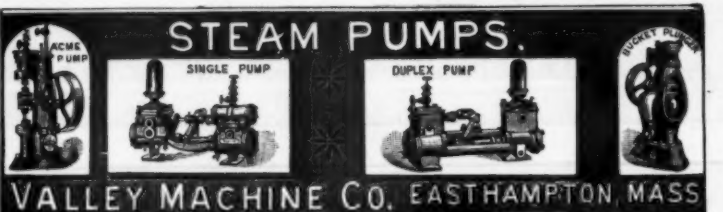
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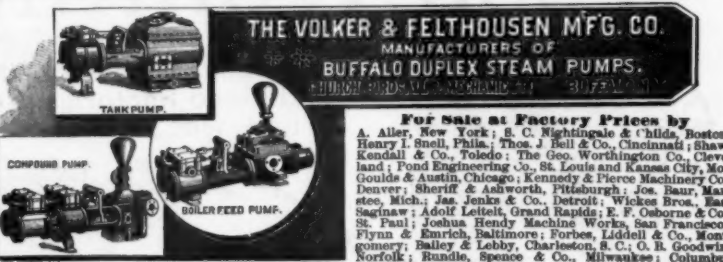
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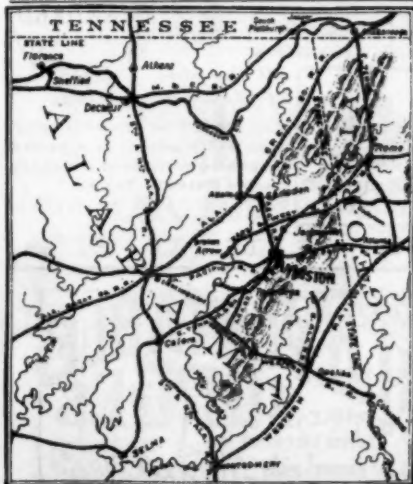
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